

BSW Timber, Newbridge on Wye

Geo-Environmental Site Condition Report

Carried out for:

BSW Timber Ltd

Newbridge on Wye Sawmills

Builth Wells

Powys

LD2 3RU

W0023/NoW/SCR – April 2022

Issue No Date	Status	Prepared by	Checked by	Approved by
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Figure 2 – Sample and Borehole Locations

Figure 3 – Borehole Schematic

APPENDICES

Appendix A: Exploratory Hole Logs

Appendix B: Chemical Laboratory Testing Results

1. INTRODUCTION

1.1. Engagement of SOCOTEC

In May 2020, SOCOTEC UK Limited (SOCOTEC) was commissioned by BSW Timber Limited (BSW) to prepare a Soil and Groundwater Monitoring Plan (SGWMP) for the Newbridge on Wye sawmills treatment plant (the Site) at Newbridge on Wye, Powys LD2 3RU.

The sawmill is currently operated under a Local Authority Part A(2) Environmental Permit (Ref: EPR/A2/3). The activities carried out at the permitted installation are as detailed in Schedule 1, Part 2, Chapter 6, Part A(2) of the Environmental Permitting (England and Wales) Regulations 2016 (S.I. 2016 No 1154) which states *“Preservation of wood and wood products with chemicals with a production capacity exceeding 75m³ per day other than exclusively treating against sapstain”*.

As per conditions 3.9.1 and 3.9.4 of the environmental permit, the implementation of a Groundwater Monitoring Plan and Soil Sampling Plan is required for the installation. The monitoring plan shall detail the chemicals used at the installation over the previous 10 years identifying active ingredients hazardous to the environment and the analysis proposed to be undertaken. It shall also contain details and locations of any boreholes required to undertake the monitoring.

The permitting regulations state that Part A installations that involve the use, production or release of a relevant hazardous substance, must undertake periodic soil and groundwater monitoring, where there is a possibility of soil and/or groundwater contamination. Article 22 of the Industrial Emissions Directive and Schedule 4(1) PPC 2012 includes a requirement for a baseline report.

1.2. Scope of Works

The site investigation was carried out over two visits in order to establish baseline soil and groundwater conditions at the site. The scope of works comprised the following:

- Intrusive investigation – rotary drilling: three position to a maximum depth of 5 m bgl, two hand dug pit to depths of 0.7 and 0.95 m, environmental soil sampling of the strata encountered and groundwater monitoring of the three installed monitoring standpipes;
- Soil and groundwater sampling and chemical laboratory testing; and

- A report to provide a statement of Site Condition of the Site.

2. THE INSTALLATION

2.1. Summary of Operational Installation Design

The Site subject to this site condition report covers an approximate area of 0.15 hectares (ha), and is rectangular. It is set entirely within the boundary of a larger sawmill facility, which is not subject to the environmental permit.

There is no wastewater emission from the treatment process and/or treatment area or drainage system within the boundary of the timber treatment installation. The working area has a closed drainage system with no outlets. All treatment preservative solution or runoff water generated during the process is directed back into the treatment plant system to a sump where it is pumped and recycled as preservative concentrate make-up water.

2.2. Substances Used at the Installation

Substances that are used within the installation boundary are presented below:

- Tebuconazole;
- Propiconazole;
- Permethrin;
- Copper;
- Didecydimethylammonium-chloride;
- 2-(2-Butoxyethoxy)ethanol (as diethylene glycol monobutyl ether); and
- 2-Aminoethanol.

2.3. Relevant Hazardous Substances

In accordance with the Soil and Groundwater Monitoring requirements of the Site's environmental permit, reference EPR/A2/3, all of the substances listed in Section 2.2, above, are considered relevant hazardous substances that should be considered in assessing the condition of the site.

3. SITE HISTORY

3.1. Site location

The Timber Treatment Plant (the Site) is situated in Builth Wells, Wales. The site is accessed from the A470, at an appropriate National Grid Reference of SO 023559. The site location is shown on Site Location Plan Figure 1.

3.2. Site Description and Reconnaissance

The Site subject to this monitoring plan covers an approximate area of 0.15 hectares (ha) and is approximately rectangular in shape. It is set entirely within the boundary of a larger sawmill facility, which is not subject to the environmental permit.

Land uses immediately around the Site are confined to the wider sawmill activities. Land uses around the sawmill as observed during the site walkover were noted as:

- North: Agricultural land
- East: Road and Haulage company
- South: Agricultural land and residential buildings
- West: Agricultural land

Appendix C presents the results of the Site walkover undertaken on 21 August 2020.

3.3. Site History and Previous Land Use

The historical development of the site and surrounding area has been reviewed by reference to the available Ordnance Survey historical mapping (see Appendix C) and is summarised in Table 1 below.

Table 1: Summary of Site History

DATE AND MAP SCALE	ON SITE	SURROUNDING AREA (500 m radius)
1888 1:10560 1889 1:2500	The site is situated within what is likely undeveloped farmland. The field in which most of the site is located in is approx. 250 m by 100 m. A small portion of the west part of site lies within the next field.	The Rhos-goch Wood is located approximately 350 m north of the site. The surrounding areas generally consist of large fields likely used for agricultural purposes. There are 3 smaller patches of land located next to the site on the west side, which appear to be wooded areas. Between two of these wooded areas are 2 building structures both L shaped, one larger structure to the north and just below this, a smaller L shaped structure. These are located approximately 100 m to the west of the site the wooded area below this is labelled as Rhos-goch. 150 m north west of site is a small building located within a field, this is not labelled.
1904 1:2500	No significant changes noted.	Only change noted is that the small building located 150 m north west of the site has now gone.
1905 1:10560	No significant changes noted.	There now appears to be a third building located between the two wooded areas, located next to (north east) the original two buildings previously noted.
1948 1:10560	No significant changes noted.	The small wooded areas surrounding the three buildings now appear to have been cleared of trees.
1972 1:2500 1974 1:2500	No significant changes noted.	There are two ponds located approximately 230 – 240 m north of the site. A path follows the outskirts of several fields 150 m north of site, this path runs between the two ponds and continues beyond 500 m of the site. A path now appears to be leading towards the area containing the three buildings. There are now 3 small rectangular buildings located 250 m south of the site, these are labelled as Coed-yr-Ynys, there appears to be a pathway running northwards toward these buildings and then along the bottom in an eastern direction. A pond is now present approx. 175 m northwest of the site.

DATE AND MAP SCALE	ON SITE	SURROUNDING AREA (500 m radius)
1989 1:2500 1995 1:2500 2001 1:10000 2003 1:1250	The site now contains a small rectangular building in the north west corner, and the area is labelled a sawmill.	The surrounding area has significantly changed, immediately north of the site is a small building, which appears to be attached to the site. 60 m north is a building structure labelled as WB. A large development labelled as a sawmill is now present 100 m east of the site; this consists of a large L shaped building with several smaller buildings attached on the sides, as well as conveyers and ramps and a tank. Immediately south of this are several conveyors. Several of the buildings appear to be connected via a track. Between the two original ponds, 250 m north of site is now labelled as a Marsh. There are also 3 drains now labelled, 150 m north, 250 m northeast and 200 m north west of site. Two areas have also changed and appear to contain tracking running 50 m west of the site to 120 m north of site as well 150 m north to 350 m northeast of site. A pond is now present approx. 100 m southeast of site.
2010 1:10000	No significant changes.	No significant change apart from a new building is now present approx. 250 m west of the site.
2020 1:10000	The site is now entirely occupied by a large L shaped building.	No significant changes.

4. ENVIRONMENTAL SETTING

4.1. Geology

The Groundsure Enviro and Geo Insight report and the British Geological Survey (BGS) Geology of Britain viewer 2020 shows the site to be located on the Cerig Formation (Mudstone, Burrow-mottled) described as sedimentary bedrock formed approximately 433 to 441 million years ago during the Silurian period. This formation consists predominantly of grey to green mudstones with dark borrow mottles.

Superficial deposits beneath the site and surrounding areas are recorded as Till, Devensian (Diamicton) on the BGS site, these are deposits formed up to 2 million years ago in the Quaternary period consisting of clay with sands and gravels. The permeability of the superficial deposits on site is noted in the Groundsure Insight Report to be 'low to high' with a 'mixed' flow type.

There are no records of artificial or made ground on or within 500 m of the site, however limited Made Ground is anticipated to be present on the site owing to the large developments of the sawmill both on and in the surrounding areas of the site.

Made ground is likely to be present across the site and surrounding building foundations.

4.2. Ground Investigation Data

The conceptual site model (CSM) supplied by BSW timber states that the treatment building (the Site) is built on superficial deposits classified as secondary undifferentiated.

4.3. Hydrology, Flooding and Surface Water Abstraction

Information on the hydrological characteristics of the Site are summarised in Table 1 below.

Table 1: SITE HYDROLOGICAL CHARACTERISTICS

CHARACTERISTIC	OBSERVATIONS
Watercourse Network and Surface Water Features	There are a number of open surface water drains on and around the site (see Figure 2). The nearest watercourse is an inland river located approximately 26 m west of the site. There are a further 17 inland rivers, and 5 lakes/lochs or reservoirs located within 500m of the site. There is one river water body catchment located on site.
Flood risks	There are no flood risk zones located on or within 50 m of site, and the risk of surface water flooding is considered negligible, and low for groundwater flooding. No flood defences, historical flood events or areas benefitting from flood defences are listed within 250 m of the site.

Surface Water Abstractions	There are no known surface water abstractions within 500 m of the site. The nearest is located 874 m southwest of the site.
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4.4. Hydrogeology and Groundwater Abstraction

The site is located on a secondary B bedrock aquifer, predominantly comprising of lower permeability layers, which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers. No other bedrock aquifers have been identified within 500 m of the site.

The Superficial Deposits underlying the site are classified as secondary undifferentiated, this is assigned where it has not been possible to attribute either category A or B to rock type, meaning that in most cases the layer in question has previously been designated as both minor and non-aquifer in different locations due to variable characteristics of the rock type. There are no known groundwater abstractions within 500 m of the site.

Details of groundwater characteristics are summarised in Table 2 below.

Table 2: SITE GROUNDWATER CHARACTERISTICS

CHARACTERISTIC	OBSERVATIONS
Discharge Consents	There are 9 recorded discharge consents within 500 m of the site, the nearest recorded as 139 m north. A full breakdown is supplied in the Envirocheck report as supplied as part of the Environmental Permit application supporting documentation.
Groundwater flooding	No flood defences, historical flood events or areas benefitting from flood defences are listed within 250 m of the site.

The Envirocheck Report indicates that there are no abstraction points with 500m of the site.

The nearest abstraction point is located 874 m southwest of the site; the source is given as a surface water abstraction.

The site is not within a groundwater Source Protection Zone.

4.5. Habitats and Land Uses

The Groundsure Insight Report indicates that the site is not located within an Environmentally Sensitive Area, but there are 8 Sites of Special Scientific Interest (SSSI), 1 National Nature Reserve (NNR), 3 Special Areas of Conservation (SAC) and 114 Designated Ancient Woodlands within 2 km of the site. The nearest SSSI is Cors Y Llyn, which is located 703 m southwest of the site; this is also a designated NNR.

The River Wye/Afon Gwy 1092 m north west, 1388 m south east and 1610 m south east of site is recorded as being SAC.

The nearest Designated Ancient Woodland is located 434 m north of the site and is a restored ancient woodland site.

5. SUMMARY OF OPERATIONAL INSTALLATION DESIGN

The Site has been in the same position with the same boundary since the treatment plant was established. The timber treatment process is conducted in three water based treatment vessels, which are housed within the treatment plant complex as defined by site plan. The vessels are designed and installed to apply industrial water based wood preservative, using a pressure process for applications in use classes 1-4. The timber treatment process comprises four distinct stages, which are the same for all plants.

1. Preparation of Timber for Treatment
2. Delivery, Mixing & Storage of Preservative Solution
3. Treatment of Timber
4. Storage & Handling of Treated Timber

The Site benefits from a closed system, which is fully bunded with no outlets to surface or drains. All areas outside the bunds for the tanks are bunded.

6. CONCEPTUAL SITE MODEL (CSM)

6.1. Potential Sources of Contamination

The potential sources of contamination identified in this report relate to the chemical treatment of timber within the treatment plant as summarised in Table 3 below.

Table 3: POTENTIAL SOURCES OF CONTAMINATION

SITE USE/ACTIVITY AND AREA	SOURCES	CONTAMINANTS
Storage and use of Tanalith and potentially other chemical for timber treatment.	Accidental spillages or leaks from the process, storage tanks, during delivery and transfer by mobile plant.	• Tebuconazole, • Propiconazole • Permethrin • Copper • Chemical Oxygen Demand (COD) • pH • Didecydimethylammonium-chloride • 2-(2-Butoxyethoxy)ethanol (as diethylene glycol monobutyl ether) • 2-Aminoethanol

6.2. Potential Migration Pathways

The pathways identified within this section are limited to those which may affect controlled water and/or environmental receptors and do not consider potential impact on human health.

The following potential pathways have been identified as potential migration pathways:

- Permeable ground conditions/rainfall infiltration;
- Lateral groundwater flow and infiltration through made ground; and
- Surface water runoff into drains.

6.3. Potential Receptors

Potential receptors have been identified and categorised as follows:

- Groundwater and soil beneath the Site;
- Surface Water features in near vicinity (<500m); and

- Surrounding natural environment.

6.4. Summary

The relevant pollutant linkages based on the potential sources, pathways and receptors outlined above are presented in Table 4 below.

Table 4: SOURCE, PATHWAYS AND RECEPTORS

SOURCE	PATHWAY	RECEPTOR
Storage and use of Tanalith and potentially other chemical for timber treatment.	Leaching and downward migration from soils through unsaturated zone into shallow groundwater	Groundwater and soil beneath the site.
	Surface water runoff	Local surface water features.
	Lateral groundwater migration through made ground and natural strata	Local surface water features. Groundwater beneath site

Since the CSM presented above is based upon desk study information it includes a series of uncertainties and assumptions, most notably:

- Ground conditions have been conceptualised based on BGS geological maps and other desk based information;
- The presence and extent of any suspected contamination is unknown in the absence of ground investigation data;
- The presence, depth and flow direction of any groundwater bodies at the site is currently unknown.

7. SITE INVESTIGATION

7.1. General

The fieldwork was carried out over 2 days on 13th May 2021 and 4th April 2022.

The exploratory hole locations are presented in Figure 2 (appended) and the exploratory hole logs are included in Appendix A. The details of the fieldwork undertaken are presented below.

All site works were completed under the instruction and supervision of SOCOTEC in accordance with BS 5930 (1999) Code of Practice for Site Investigations. The exploratory hole logs are based on BS 5930 (1999) incorporating Amendment 1 and are therefore compliant with Eurocode 7.

The borehole locations were sited on the following considerations:

- The location of the permitted treatment facility
- An assumed groundwater flow direction of north to south
- Access, health and safety, buried services and avoiding creating potential new pathways.

The locations were agreed between SOCOTEC and BSW Timber in advance of the fieldwork and are shown on Figure 2. During the visit in May 2021, it was found that two of the proposed borehole locations could not be drilled due to site services (buried and overhead), access and ground condition constraints and were therefore excavated as two shallow hand pits (HP01/BH01 and HP02/BH02). SOCOTEC remobilised to site in April 2022 to drill borehole BH01 and BH02 in two new positions. Therefore, the works were completed over two visits, the second visit was arranged 11 months later to install the missing boreholes from the original proposal in accessible pre-agreed locations.

All locations were cleared and positioned away from identified or suspected buried services. A Ground Penetrating Radar and Cable Avoidance Tool (CAT) survey was conducted by Midland Surveys Ltd to scan each location prior to breaking ground and verify it to be clear of buried services. Hand dug inspection pits were undertaken at each rotary drilled borehole location to a depth of 1.2 m bgl.

It was anticipated that three boreholes would be advanced to a depth of around 5 m below ground level (m bgl) and groundwater monitoring standpipes installed. The fieldwork therefore comprised:

- Installation of the first borehole (BH03) and groundwater monitoring installation to depth of 3.5 m bgl during the first site visit.
- Excavation of two hand pits to depths of 0.7 m and 0.95 m bgl respectively in place of the borehole installations during the first visit (HP01/BH01 and

HP02/BH02 respectively). This decision was made once the constraints to rotary drilling were realised.

- Excavation of two remaining boreholes (BH01 and BH02) in April 2022 and installation of groundwater monitoring standpipes in each to depths of 5 m bgl and 4 m bgl respectively.

7.2. Groundwater Monitoring Installations

On completion, the boreholes were installed with 50 mm standpipes for the purpose of groundwater monitoring and sampling.

The depths of the response zones were specified by SOCOTEC and were positioned to enable groundwater monitoring and sampling. The response zone was selected to target the natural strata immediately underlying the Made Ground. Each response zone was formed using an inert gravel filter pack sealed above with bentonite and caps were placed at the top of each standpipe. Details of the installations are presented in the borehole exploratory logs in Appendix A.

7.3. Groundwater Monitoring and Sampling

The first set of groundwater monitoring was undertaken by SOCOTEC on 3rd June 2021 and was only collected from BH03. The second set of groundwater monitoring was undertaken on 11th April 2022. Groundwater was collected from BH01, BH02 and BH03 during this monitoring visit. The recharge rate was noted to be very slow on both occasions.

The groundwater samples were recovered from the 50 mm standpipes by use of well-specific disposable bailers in accordance with BS10175. The purging of three well volumes was not possible due to the very slow recharge rate of the boreholes, so samples were collected without fully purging before sampling. Water samples were decanted into appropriate containers to be transported to the analytical laboratory.

The monitoring results are presented in Table 5 below. Groundwater levels were recorded prior to the collection of samples.

Table 5: SUMMARY OF GROUNDWATER MONITORING 2021-2022

Borehole ID	Date of Sampling	Groundwater Level (m bgl)	Depth of borehole (m bgl)	Saturated Depth (m)
BH03	03/06/2021	2.66	3.20	0.54
BH01	11/04/2022	2.93	5.14	2.21
BH02	11/04/2022	3.46	4.04	0.58
BH03	11/04/2022	2.83	3.22	0.39

7.4. Soil Sampling

Soil samples were collected from the different strata encountered during both sets of drilling works in April 2021 at HP01/BH01, HP02/BH02 and BH03 and in May 2021 at locations BH01 and BH02. No visual or olfactory contamination was noted during any instance of soil sampling.

The samples, which were subsequently tested, were attributed to the material represented in the made ground strata and the natural deposit strata in which the groundwater was associated. Descriptions of the samples are contained within the exploratory hole logs in Appendix A.

Soil samples were collected in appropriate containers and transported to the analytical laboratory.

8. LABORATORY ANALYSIS

8.1. Soil Chemical Laboratory Testing

A programme of chemical laboratory testing was scheduled by SOCOTEC on the soil samples obtained during the intrusive investigation. The analytical suites were selected after taking into consideration potential contaminants associated with the current permitted site usage. The testing was undertaken at the Burton-on-Trent laboratories of SOCOTEC. The scheduled laboratory tests carried out on the groundwater samples are detailed in Table 6 and the results are presented in Appendix B.

Table 6: SUMMARY OF SOIL CHEMICAL LABORATORY TESTING

Determinand
• Triazole- Pyrethroid Suite (inc. Tebuconazole, Propiconazole and Permethrin). • Copper • pH • Didecylmethylammonium-chloride • 2-(2-Butoxyethoxy)ethanol (as diethylene glycol monobutyl ether) • 2-Aminoethanol (as ethanolamine)

8.2. Soil Chemical Laboratory Results

The results of the soil analytical results for the relevant hazardous substances are presented in Table 7 below.

Table 7: SOIL ANALYTICAL RESULTS

Sample ID	Date Sampled	Sample Depth m BGL	pH	Copper mg/kg	2-Amino ethanol mg/kg	2-(2-Butoxyethoxy) ethanol mg/kg	DDAC* mg/kg	Permethrin mg/kg	Propiconazole mg/kg	Tebuconazole mg/kg
BH01 ES1	13/05/21	0.4	7.1	60.5	<20	<10	<0.1	<0.1	<1	<1
BH01 ES2	13/05/21	0.9	7.6	40.5	<20	<10	<0.1	<0.1	<1	<1
BH02 ES1	13/05/21	0.7	7.9	50.1	<20	<10	0.16	<0.1	<1	<1
BH03 ES1	13/05/21	0.5	8.8	131.4	<20	<10	<0.1	<0.1	<1	<1
BH03 ES2	13/05/21	1.0	7.9	55.2	<20	<10	<0.1	<0.1	<1	<1
BH03 ES3	13/05/21	1.8	8.0	37.7	<20	<10	<0.1	<0.1	<1	<1
BH01 ES1	04/04/22	0.5	9.5	45.9	<20	<10	0.24	<0.1	<1	<1
BH01 ES2	04/04/22	1.0	6.6	39.1	<20	<10	0.41	<0.1	<1	<1

Sample ID	Date Sampled	Sample Depth m BGL	pH	Copper mg/kg	2-Amino ethanol mg/kg	2-(2-Butoxyethoxy) ethanol mg/kg	DDAC* mg/kg	Permethrin mg/kg	Propiconazole mg/kg	Tebuconazole mg/kg
BH02 ES1	04/04/22	0.8	7.0	52.9	<20	<10	0.18	<0.1	<1	<1
BH02 ES2	04/04/22	1.5	6.5	36.7	<20	<10	0.68	<0.1	<1	<1

8.3. Groundwater Chemical Laboratory Testing

A programme of chemical laboratory testing was scheduled by SOCOTEC on the groundwater samples obtained during the intrusive investigation and subsequent monitoring visit. The analytical suites were selected after taking into consideration potential contaminants associated with the current permitted site usage.

The testing was undertaken at the Burton-on-Trent laboratories of SOCOTEC. The scheduled laboratory tests carried out on the groundwater samples are detailed in Table 8 and the results are presented in the Appendix.

Table 8: SUMMARY OF GROUNDWATER CHEMICAL LABORATORY TESTING

Determinand
• Triazole-Pyrethroid Suite (inc. Tebuconazole, Propiconazole and Permethrin). • Copper and Sodium • Chemical Oxygen Demand (COD) • pH • Didecylmethylammonium-chloride • 2-(2-Butoxyethoxy)ethanol (as diethylene glycol monobutyl ether) • 2-Aminoethanol (as ethanolamine)

8.4. Groundwater Chemical Laboratory Results

The results of the groundwater analytical results for the relevant hazardous substances are presented in Table 9 below.

Table 9: GROUNDWATER ANALYTICAL RESULTS

Sample ID	Date Sampled	pH	Copper mg/l	2-Amino ethanol mg/l	2-(2-Butoxyethoxy) ethanol ** mg/l	DDAC* µg/l	Permethrin µg/l	Propiconazole µg/l	Tebuconazole µg/l
BH03	03/06/21	7.6	0.002	<20.0	<1000	<10.0	<0.10	<1.00	<1.00
BH01	11/04/22	6.6	<0.001	<20.0	<10.0	<10.0	<1.0	<0.10	<0.10
BH02	11/04/22	7.2	0.002	<20.0	<10.0	<10.0	<1.0	<0.10	<0.10
BH03	11/04/22	6.9	0.001	<20.0	<10.0	<10.0	<1.0	<0.10	<0.10

**The high LoD for 2-(2-Butoxyethoxy) ethanol (<1000 mg/l) in BH03 was due to matrix interference in the sample.

9. STATEMENT OF SITE CONDITION

9.1. Introduction

This document represents the initial Site Condition Report ("SCR") for the timber treatment site located within the BSW Newbridge Site.

This report describes the state of the land in order to provide baseline data set to be kept as an addendum to the Site's Environmental Permit. This is so that future soil and groundwater analysis data can be compared to assess the effectiveness of the Site's environmental protection measures and / or assess the state of the Site upon surrender of the Environmental Permit, in order to ascertain whether a significant increase in pollution of soil or groundwater has taken place.

9.2. Soils

Soils were tested at varying depths targeting the made ground. Table 3 shows the substances of concern that are used within the processing plant.

The baseline analytical data from May 2021 shows that only DDAC was recorded in one shallow sample at location BH02, down gradient of the processing plant, with a concentration of 0.16 mg/kg in ES1 at 0.7 m bgl. All other samples recorded DDAC below the limit of detection.

BH03 ES1 recorded the highest pH value of 8.8 and the greatest copper concentration of 131.4 mg/kg, when compared to the average value of 62.6 mg/kg during that visit.

During the second visit in April 2022, DDAC was recorded in every sample above the detection limit within a range of 0.18 mg/kg and 0.68 mg/kg.

BH01 ES1 recorded the highest pH value of 9.5 and the greatest copper concentration was found in BH02 ES1 at 52.9 mg/kg, when compared to the average value of 43.7 mg/kg during that visit.

Overall, the soil analytical results show low concentrations for substances of concern.

9.3. Groundwater

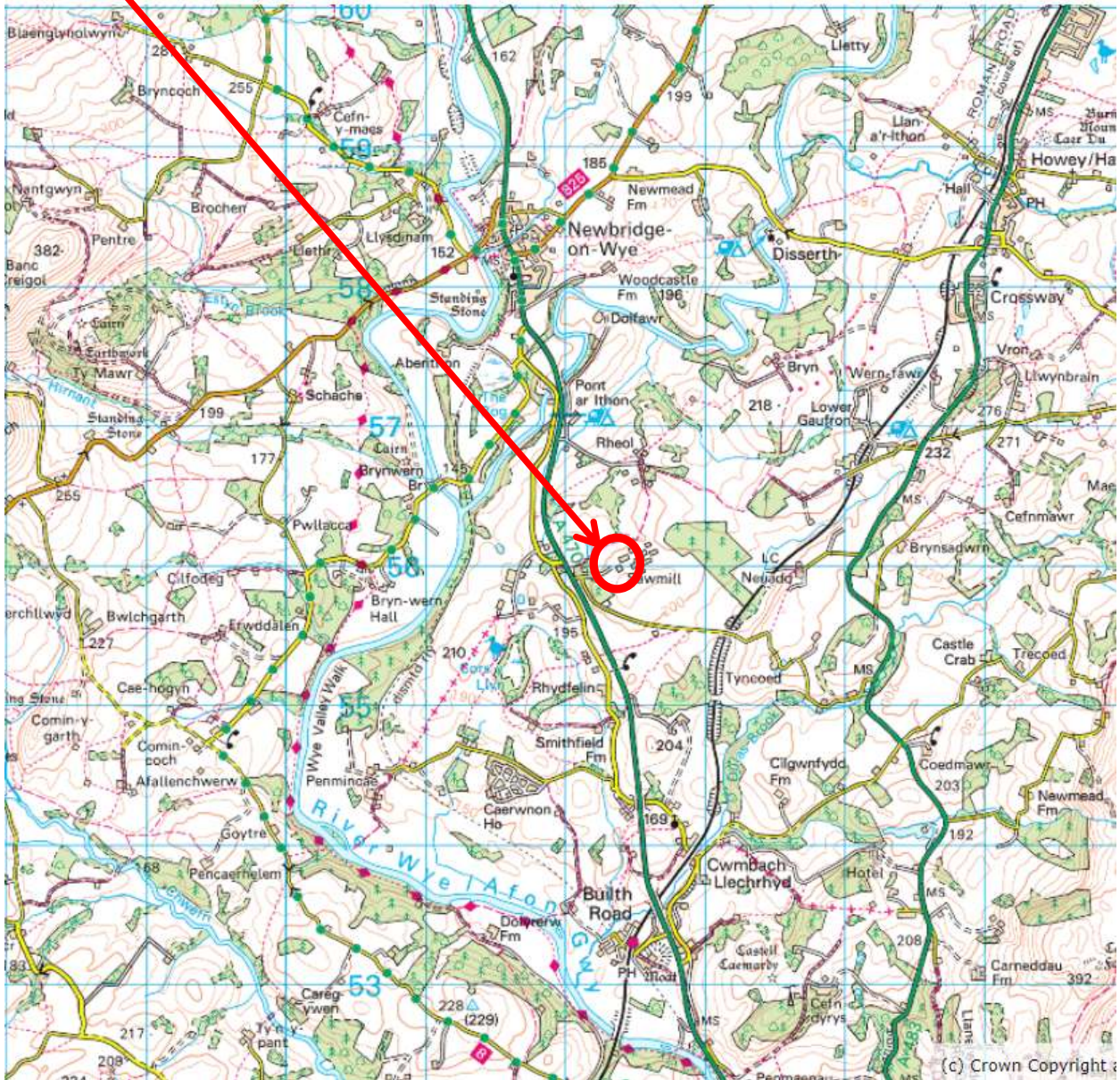
Whilst the locations of the boreholes were selected for their proximity to the Site's processes, data from the conceptual site model assumes that groundwater flow is from north to south. During drilling works, a water strike was recorded in BH03 at 0.6 m with damp gravel being observed at a similar depth. During the groundwater sampling visits April 2022, BH03 had only 0.39 m of water in the standpipe.

For the substances analysed within the groundwater samples: Permethrin, Propiconazole and Tebuconazole in BH01, BH02 and BH03 were all recorded below laboratory limits of detection. Copper was below the limit of detection (<0.001 mg/l) in BH01 but detected at concentrations of 0.002 mg/l and 0.001 mg/l in BH02 and BH03 respectively. All other determinands, which required testing, were below the limit of detection.

FIGURES

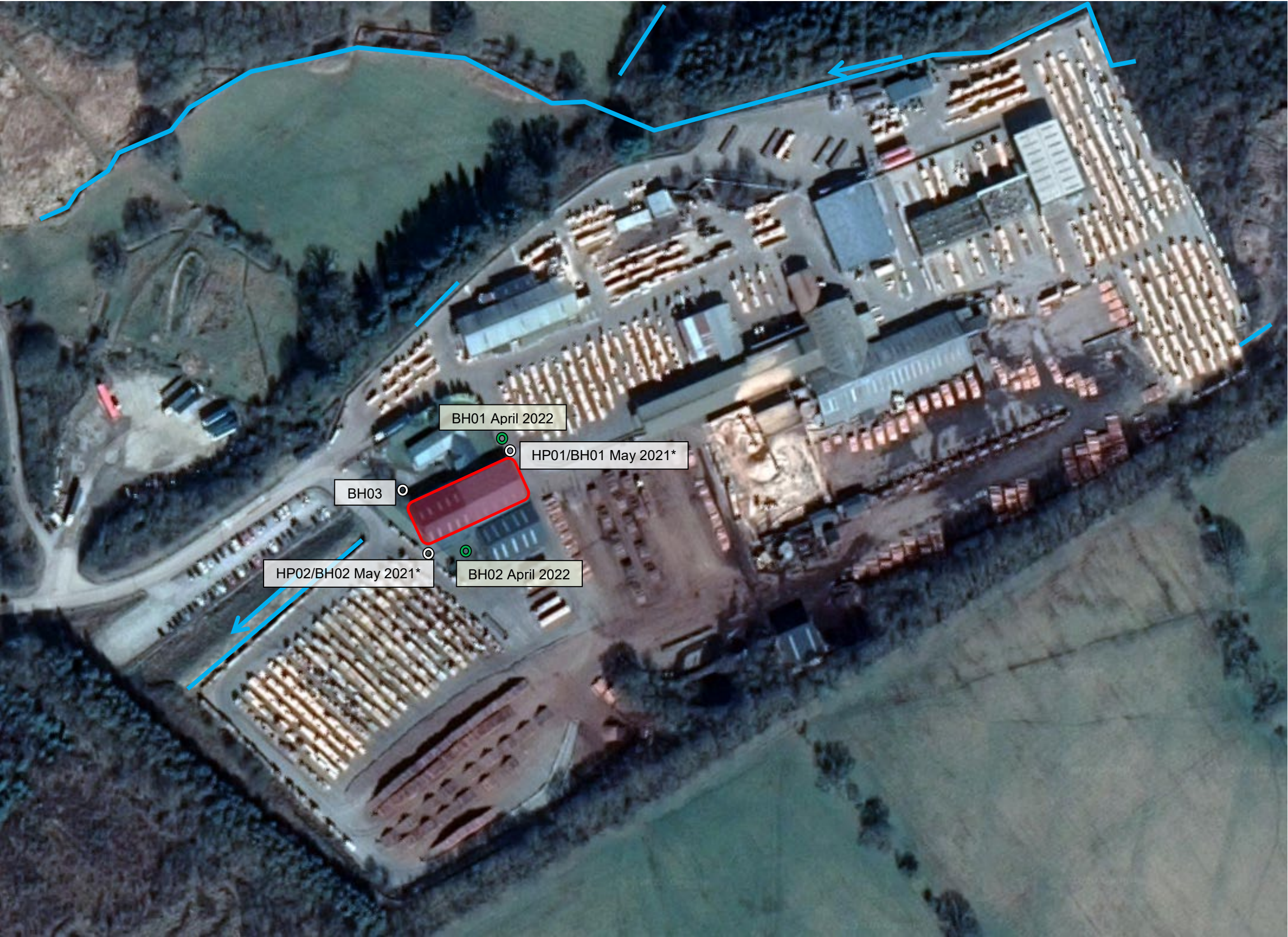
Site Location

The Site



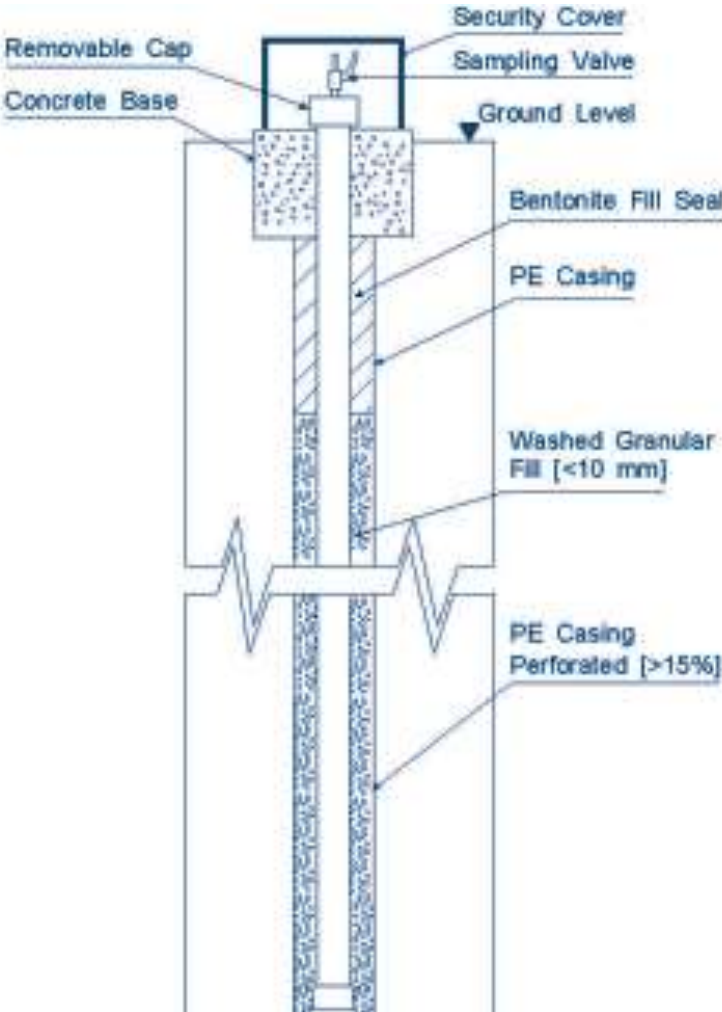
Notes: Not to scale	Project BSW Sawmills – Newbridge on Wye Project No. W6040 Carried out for BSW Sawmills Ltd	Figure 1
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Site Address:
BSW Timber
Newbridge on Wye, Builth Wells, Powys LD2 3RU
Contact Wayne Jones



Title Borehole and Hand Pit Locations	
Project Newbridge Sawmills Treatment Facility	
Client BSW Timber	
Key Groundwater and/or soil sample location, installed May 2021 Groundwater and/or soil sample location, installed April 2022 Permit Site Boundary Drain / Stream * Unable to drill boreholes during May 2021 visit due to various constraints. Excavated as hand pits. Still referred to in lab reports as BH01 & BH02, dated May 2021. Renamed here for clarity.	
Scale NTS	
 SOCOTEC	
Project No W0023	Drawing Number Figure 2

Schematic of Borehole Design



Notes: Not to scale	Project Project No. Carried out for	BSW Sawmills Ltd W0023 BSW Sawmills Ltd	Figure 3
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Appendix A

EXPLORATORY HOLE LOGS

Borehole Log



Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	Coordinates	National Grid	System						
	0.00 - 5.00	04 Apr 22 - 04 Apr 22	Hand dug to 1.2 m bgl. Rotary open hole to 5.0 m bgl Plain and slotted piping installed with gas tap. Backfilled with arisings and gravel upon completion.	Comacchio	Dynamic Sampling	CE	04 Apr 22	Depth 4.00	Dia. (mm) 50	Depth	Dia. (mm)	Depth	Remarks										
Approved																							
	Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description		Chisel.	Water Entry	Backfill		
	Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail					
0			0.20 - 0.50	ES 1										0.12 (0.12)			Blacktop and concrete. (MADE GROUND)					SP	
														0.12 (0.48)			Grey medium and coarse GRAVEL with low cobble content of Type 1. (MADE GROUND)						
			0.80 - 1.00	ES 2										0.60 (0.60)			Light grey mottled orange brown very sandy clayey GRAVEL. Gravel is angular to subangular fine to coarse of mudstone. (Possible TILL, DEVENSIAN - DIAMICTON)					1.00	
1														1.20			Light yellowish brown fine to coarse very sandy GRAVEL. Gravel is mudstone. (Possible TILL, DEVENSIAN - DIAMICTON)						
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
General Remarks																Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed				
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.												Project BSW Newbridge SCR Project No. W0023 Carried out for BSW Timber				Status FINAL		Scale 1:50 Printed 23 May 2022 13:25:55 © Copyright SOCOTEC UK Limited		Borehole BH1 Sheet 1 of 1			

Borehole Log



Checked 	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level										
	0.00 - 5.00	04 Apr 22 - 04 Apr 22	Hand dug to 1.2 m bgl. Windowless sampling to 3.0 m bgl. Rotary open hole to 5.0 m bgl. Plain and slotted piping installed with gas tap. Backfilled with arisings and gravel upon completion.	Comacchio	Dynamic Sampling	CE	04 Apr 22	Depth 5.00	Dia. (mm) 50	Depth	Dia. (mm)	Depth	Remarks	Coordinates	System									
Approved 																								
0 1 2 3 4 5 6 7 8 9 10	Date	Time	Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description			Chisel.	Water Entry	Backfill		
	Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Casing	Water							Main	Detail						
			0.20 - 0.80	ES 1										(0.20)			TOPSOIL.						SP	
														0.20			Light to dark brown and grey gravelly very sandy CLAY with rare rootlets. Gravel is subangular to subrounded fine to medium of ash, coal, clinker, quartzite, mudstone and sandstone. (MADE GROUND)							
			0.80 - 1.20	ES 2										(0.60)										
														0.80			Light grey mottled yellow slightly gravelly sandy CLAY. (Possible TILL, DEVENSIAN - DIAMICTON)						1.00	
			1.50	ES 3										(0.40)			Stiff light grey yellow and brown sandy very gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone, limestone, shale and mudstone. (Possible TILL, DEVENSIAN - DIAMICTON)							
														1.20										
														(0.80)										
														2.00			Light grey mottled brown and orange sandy very gravelly CLAY with medium cobble content. Gravel is angular to subangular fine to coarse of sandstone, limestone and mudstone. (Possible TILL, DEVENSIAN - DIAMICTON)							
														(1.00)										
														3.00										
																								
																	END OF EXPLORATORY HOLE						5.00	
General Remarks																Hard Boring / Chiselling Depths Duration (mins) Tool			Groundwater Entries No. Depth Remarks Sealed					
Notes For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.						Project BSW Newbridge SCR Project No. W0023 Carried out for BSW Timber						Status FINAL			Scale 1:50 Printed 23 May 2022 13:26:21 © Copyright SOCOTEC UK Limited			Borehole BH2 Sheet 1 of 1						

Borehole Log



Checked	Depth		Dates		Method		Equipment		Rig Crew		Logger		Logged		Hole		Casing		Depth Related Remarks		Ground Level		Coordinates		System		
	0.00 - 5.00		13 May 21 - 13 May 21		Hand dug to 1.2 m bgl. Windowless sampling to 1.8 m bgl. Rotary open hole to 5.0 m bgl. Plain and slotted piping installed with gas tap. Backfilled with arisings and gravel upon completion.						AW		13 May 21		Depth 5.00 Dia. (mm) 50		Depth 5.00 Dia. (mm) 50		Depth		Remarks						
Approved																											

0	Date		Time		Samples			Field Tests			Samp / Test		Coring		TCR %		SCR %		RQD %		Water added		Depth		Level		Legend		Strata Description		Chisel.		Water		Entry		Backfill																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Casing	Water	Depth (Diameter)	Depth	Level	Legend	Main	Detail	Chisel.	Water	Entry	Backfill																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			0.30 - 0.50	ES 1									(0.50)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

Appendix B

CHEMICAL LABORATORY TESTING RESULTS

Certificate of Analysis

Client: SOCOTEC Consultancy North

Project: 22040518

Quote: BEC211123355 V1.1

Project Ref: W0023

Site: BSW Timber

Contact: Dave Heasman

Address: SOCOTEC Central
Leofric Business Park
Progress Close
Coventry
CV3 2TF

E-Mail: Dave.Heasman@socotec.com

Phone: 01926 819 407

No. Samples Received: 4

Date Received: 08/04/2022

Analysis Date: 12/05/2022

Date Issued: 12/05/2022

Report Type: Final Version 01

This report supercedes any versions previously issued by the laboratory



Account Manager
Jacqui Hannah
01283 204384



Authorised by the Operations Manager
Becky Batham



Client: SOCOTEC Consultancy North
Project Name: W0023
Project No: 22040518
Date Issued: 12/05/2022

Samples Analysed

<u>Sample Reference</u>	<u>Text ID</u>	<u>Sample Date</u>	<u>Sample Type</u>
BH1-1-ES-0.2-0.5	22040518-001	04/04/2022 00:00:00	SOLID
BH1-2-ES-0.8-1.0	22040518-002	04/04/2022 00:00:00	SOLID
BH2-1-ES-0.2-0.8	22040518-003	04/04/2022 00:00:00	SOLID
BH2-2-ES-1.4-1.5	22040518-004	04/04/2022 00:00:00	SOLID

Analysis Results

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001		002		003		004
					Customer ID	BH1-1-ES-0.2-0.5		BH1-2-ES-0.8-1.0		BH2-1-ES-0.2-0.8		BH2-2-ES-1.4-1.5
					Sample Type	LPL	SOLID	LPL	SOLID	LPL	SOLID	LPL
					Sampling Date	04/04/2022	04/04/2022	04/04/2022	04/04/2022	04/04/2022	04/04/2022	04/04/2022
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM			9.5*		6.6		7.0	
Copper as Cu	ICPMSS	1.6	mg/kg^	UM			45.9*		39.1		52.9	
Sodium as Na	ICPSOIL	30	mg/kg^	U			5700*		328		288	
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U		<0.001		<0.001		0.005		<0.001
Sodium as Na	ICPWATVAR (Dissolved)	1	mg/l	U		14		8		1		4
Total Moisture at 35°C	CLANDPREP	0.1	%	N			3.4		16.4		28.5	
Description of Solid Material	CLANDPREP		-	N			GRAVEL		CLAY		SILT	
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 10:1		kg	N			0.090		0.090		0.090	
Fraction above 4mm (%)	Leachate Prep CEN 10:1		%	N			100		100		100	
Fraction of non-crushable material (%)	Leachate Prep CEN 10:1		%	N			0		0		0	
Volume of Water for 10:1 Leach (ltr)	Leachate Prep CEN 10:1		l	N			0.895		0.886		0.862	
Weight of Sample Leached (kg)	Leachate Prep CEN 10:1		kg	N			0.095		0.104		0.128	
Butyl Diglycol	SUB005	10	mg/kg	N			<10.0		<10.0		<10.0	
DDAC	SUB005	0.1	mg/kg	N			0.24		0.41		0.18	
Ethanolamine	SUB005	20	mg/kg	N			<20.0		<20.0		<20.0	
Propiconazole	SUB005	1	mg/kg	N			<1.00		<1.00		<1.00	
Tebuconazole	SUB005	1	mg/kg	N			<1.00		<1.00		<1.00	
Permethrin	SUB005	0.1	mg/kg	N			<0.10		<0.10		<0.10	

Analysis Results

					Sample ID
					004
					Customer ID
					BH2-2-ES-1.4-1.5
					Sample Type
					SOLID
					Sampling Date
					04/04/2022
Analysis	Method Code	MDL	Units	Accred.	
pH (2.5:1 extraction)	PHSOIL	1	pH units	UM	6.5
Copper as Cu	ICPMSS	1.6	mg/kg^	UM	36.7
Sodium as Na	ICPSOIL	30	mg/kg^	U	142
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U	
Sodium as Na	ICPWATVAR (Dissolved)	1	mg/l	U	
Total Moisture at 35°C	CLANDPREP	0.1	%	N	9.0
Description of Solid Material	CLANDPREP		-	N	CLAY
Equivalent Weight of Dry Material (kg)	Leachate Prep CEN 10:1		kg	N	0.090
Fraction above 4mm (%)	Leachate Prep CEN 10:1		%	N	62.8
Fraction of non-crushable material (%)	Leachate Prep CEN 10:1		%	N	0
Volume of Water for 10:1 Leach (ltr)	Leachate Prep CEN 10:1		l	N	0.890
Weight of Sample Leached (kg)	Leachate Prep CEN 10:1		kg	N	0.100
Butyl Diglycol	SUB005	10	mg/kg	N	<10.0
DDAC	SUB005	0.1	mg/kg	N	0.68
Ethanolamine	SUB005	20	mg/kg	N	<20.0
Propiconazole	SUB005	1	mg/kg	N	<1.00
Tebuconazole	SUB005	1	mg/kg	N	<1.00
Permethrin	SUB005	0.1	mg/kg	N	<0.10

Certificate of Analysis

Report No.: 22-19086-1

Issue No.: 1

Date of Issue 27/04/2022

Customer Details: SOCOTEC UK - Environmental Chemistry, P O Box 100, Bretby Business Park, Burton-on-Trent, DE15 0XD

Customer Contact: Louise Smith

Customer Order No.: Not Supplied

Customer Reference: 22040518

Quotation Reference: 220413/03

Description: 4 soil samples

Date Received: 13/04/2022

Date Started: 19/04/2022

Date Completed: 27/04/2022

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: None



Approved By: Matthew Hickson, Laboratory Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

This certificate shall not be reproduced except in full without the prior written approval of the laboratory.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

Results on an Interim Report are not dry-weight corrected.

Where the laboratory is not responsible for the sampling, results apply to the sample(s) as they were received.

The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.

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RPS Environmental Management Limited trading as RPS Mountainheath. Registered in England No. 01756175.

13 St Martins Way, Bedford, Bedfordshire, MK42 0LF. T +44 1462 480 400

A member of the RPS Group plc. Terms and conditions apply - copy on request

Results Summary

Report No.: 22-19086-1

Customer Reference: 22040518

Customer Order No: Not Supplied

Customer Sample No	22040518-001-7	22040518-002-7	22040518-003-7	22040518-004-7
Customer Sample ID	BH1 0.2-0.5	BH1 0.8-1.0	BH2 0.2-0.8	BH2 1.4-1.5
RPS Sample No	488252	488253	488254	488255
Sample Type	SOIL	SOIL	SOIL	SOIL
Sample Depth (m)	0.2-0.5	0.8-1.0	0.2-0.8	1.4-1.5
Sampling Date	04/04/2022	04/04/2022	04/04/2022	04/04/2022

Determinand	CAS No	Codes	SOP	Units	RL				
dry solids (at 105°C)		N	397	% w/w		80.1	88.0	87.7	89.0
butyl diglycol	112-34-5	N	in house	mg/kg DW	10	< 10.0	< 10.0	< 10.0	< 10.0
N,N-didecyl-N,N-dimethylammonium chloride (DDAC)	7173-51-5	N	in house	mg/kg DW	0.1	0.24	0.41	0.18	0.68
ethanolamine	141-43-5	N	in house	mg/kg DW	20	< 20.0	< 20.0	< 20.0	< 20.0
permethrin	52645-53-1	N	in house	mg/kg DW	0.1	< 0.10	< 0.10	< 0.10	< 0.10
propiconazole	60207-90-1	N	in house	mg/kg DW	1	< 1.00	< 1.00	< 1.00	< 1.00
tebuconazole	107534-96-3	N	in house	mg/kg DW	1	< 1.00	< 1.00	< 1.00	< 1.00

Comments

Report No.: 22-19086-1

Customer Reference: 22040518

Customer Order No: Not Supplied

Job	Description	Job Comments
22-19086	4 soil samples	Due to small amount of sample provided, DDAC extraction was performed with just 1g. That and the matrix of the samples (mainly rocks) provides a potential homogeneity issue.

Deviating Samples

Report No.: 22-19086-1

Customer Reference: 22040518

Customer Order No: Not Supplied

Our policy on Deviating Samples has been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling. Samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be compromised.

Where no sampling date was supplied, samples have been declared to be deviating. If the date can be supplied, results may be reissued if assessed not deviating.

Where the sample container used was unsuitable or broken, the sample is flagged as deviating and re-sampling/re-submission may be required.

RPS No.	Customer No.	Customer ID	Date Sampled	Containers Received	Deviating	Reason for Deviation
488252	22040518-001-7		04/04/2022	60ml amber glass jar	Yes	Temperature of samples exceeded in transit/storage
488253	22040518-002-7		04/04/2022	60ml amber glass jar	Yes	Temperature of samples exceeded in transit/storage
488254	22040518-003-7		04/04/2022	60ml amber glass jar	Yes	Temperature of samples exceeded in transit/storage
488255	22040518-004-7		04/04/2022	60ml amber glass jar	Yes	Temperature of samples exceeded in transit/storage

Report No.: 22-19086-1

Key Code	Description
U	UKAS Accredited Test - UKAS accreditation is only implied if the report carries the UKAS logo
F	UKAS Flexible Scope Test
M	MCERTS Accredited Test - MCERTS accreditation is only implied if the report carries the MCERTS logo
N	Not Accredited Test
O	Marine Management Organisation (MMO) Validated
S	Subcontracted to approved laboratory
US	Subcontracted to approved laboratory UKAS Accredited for the test
MS	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
SI	Subcontracted to internal RPS Group laboratory
USI	Subcontracted to internal RPS Group laboratory UKAS Accredited for the test
MSI	Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test
I/S (in results)	Insufficient Sample
U/S (in results)	Unsuitable Sample
S/C (in results)	See Comments
ND (in results)	Not Detected
AD (in units)	Results are expressed on an air-dried basis at 30 °C
DW (in units)	Results are expressed on a dry weight basis at 105 °C

Sample Type	Sample Retention and Disposal Period
Foodstuff	1 month (if frozen) from the issue date of this report
Waters	2 weeks from the issue date of this report
Other Liquids	1 month from the issue date of this report
Solids / Soils	1 month from the issue date of this report
Sediments	1 month from the issue date of this report

Note: Sample retention may be subject to agreement with the customer for particular projects

Where the dry solids value of a sample is low (<50%), reporting limits are automatically raised for all determinants analysed on an as-received basis.

Soil Typing	Description
Type 1	Clay - Brown
Type 2	Clay - Grey/Black
Type 3	Sand
Type 4	Top Soil (Standard)
Type 5	Top Soil (High Peat)
Type 6	Made Ground (>50% Clay)
Type 7	Made Ground (>50% Sand)
Type 8	Made Ground (>50% Top Soil)
Type X	Other

Certificate Notes	Description
Note 1	This test report shall not be reproduced except in full, without written approval of the Laboratory.
Note 2	Unless otherwise stated, results are not corrected for analytical recoveries.
Note 3	All samples were received in good condition unless otherwise stated. Results provided by the Laboratory are based on samples submitted by clients. Once submitted, samples requiring analysis are stored at 5 ± 3°C. The Laboratory cannot be held responsible for the storage, condition or preservation of samples prior to arrival.
Note 4	Samples were taken by the customer and, unless otherwise stated, sampling locations were not supplied.
Note 5	Soil descriptions are given in order to provide a log of sample matrices submitted and are not intended as full geological descriptions.
Note 6	Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Note for results expressed on an air-dried basis: Results for soil samples are reported based on the dry weight of soil which has been air-dried in open, shallow trays at temperatures below 30 °C and subsequently ground and sieved to pass through a nominal 710 µm aperture sieve. Prior to any grinding, any material which is retained on a sieve of mesh size 4.75mm is discarded. In most cases, analysis is carried out directly on these prepared soils.

Note: Where the following information is included in this certificate, it has usually been supplied by the customer: Customer Sample ID, Sample Location, Sample Depth, Sampling Date and Sampling Time. The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.

Deviating Sample Report

Sample Reference	Text ID	Reported Name	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
------------------	---------	---------------	---------------------	-----------------	-----------	---------------------------	------------------	--------------

Analysis Method

<u>Analysis</u>	<u>Analysis Type</u>	<u>Analysis Method</u>
CLANDPREP	PHYS	As Received
ICPMSS	METALS	Air Dried & Ground
ICPMSW (Dissolved)	METALS	Filtered
ICPSOIL	METALS	Air Dried & Ground
ICPWATVAR (Dissolved)	METALS	Filtered
Leachate Prep CEN 10:1	PHYS	As Received
PHSOIL	INORGANIC	As Received
SUB005	SUBCON	

Result Report Notes

Letters alongside results signify that the result has associated report notes.
The report notes are as follows:

<u>Letter</u>	<u>Note</u>
A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to recoveries beyond our calibration range and following the maximum size of dilution allowed, the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.

HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total

Additional Information

This report refers to samples as received, and SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

In the accreditation column of analysis report the codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 35° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full and with approval from the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

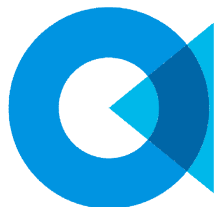
Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the Subcontracted lab for information regarding any deviancies for this analysis.

End of Certificate of Analysis



Environmental
Chemistry

Certificate of Analysis

Client: SOCOTEC Consultancy North

Project: 22040871

Quote: BEC211123355 V1.1

Project Ref: BSW Timber Newbridge

Site: BSW Timber Newbridge

Contact: Keith O'Brien

Address: SOCOTEC Central
Leofric Business Park
Progress Close
Coventry
CV3 2TF

E-Mail: Keith.O'Brien@SOCOTEC.com

Phone: 01926 819 404

No. Samples Received: 3

Date Received: 13/04/2022

Analysis Date: 29/04/2022

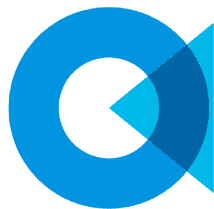
Date Issued: 06/05/2022

Report Type: Final Version 01

This report supercedes any versions previously issued by the laboratory

Account Manager
Jacqui Hannah
01283 204384

Authorised by the Operations Manager
Becky Batham



Client: SOCOTEC Consultancy North
Project Name: BSW Timber Newbridge
Project No: 22040871
Date Issued: 06/05/2022

Samples Analysed

<u>Sample Reference</u>	<u>Text ID</u>	<u>Sample Date</u>	<u>Sample Type</u>	<u>Sample Description</u>
BH1	22040871-001	11/04/2022 11:30:00	WATER	Ground Water
BH2	22040871-002	11/04/2022 12:00:00	WATER	Ground Water
BH3	22040871-003	11/04/2022 12:30:00	WATER	Ground Water

Analysis	Method Code	MDL	Units	Accred.	Sample ID	001	002	003
					Customer ID	BH1	BH2	BH3
					Sample Type	WATER	WATER	WATER
					Sampling Date	11/04/2022	11/04/2022	11/04/2022
pH	PHCONDW	1	pH units	U		6.6	7.2	6.9
COD (Settled)	WSLM11	5	mg/l	U		8	11	11
Copper as Cu	ICPMSW (Dissolved)	0.001	mg/l	U		<0.001	0.002	0.001
Sodium as Na	ICPWATVAR (Dissolved)	1	mg/l	U		40	78	32
Butyl Diglycol	SUB005	10	mg/l	N		<10.0	<10.0	<10.0
DDAC	SUB005	10	µg/l	N		<10.0	<10.0	<10.0
Ethanolamine	SUB005	20	mg/l	N		<20.0	<20.0	<20.0
Propiconazole	SUB005	0.1	µg/l	N		<0.10	<0.10	<1.00
Tebuconazole	SUB005	0.1	µg/l	N		<0.10	<0.10	<1.00
Permethrin	SUB005	0.1	µg/l	N		<1.00	<1.00	<1.00

Certificate of Analysis

Report No.: 22-19152-1

Issue No.: 1

Date of Issue 28/04/2022

Customer Details: SOCOTEC UK - Environmental Chemistry, P O Box 100, Bretby Business Park, Burton-on-Trent, DE15 0XD

Customer Contact: Jonathan Chandler

Customer Order No.: 22040871

Customer Reference: Not Supplied

Quotation Reference: 220308/01

Description: 3 water samples

Date Received: 19/04/2022

Date Started: 21/04/2022

Date Completed: 28/04/2022

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: None



Approved By: Matthew Hickson, Laboratory Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

This certificate shall not be reproduced except in full without the prior written approval of the laboratory.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

Results on an Interim Report are not dry-weight corrected.

Where the laboratory is not responsible for the sampling, results apply to the sample(s) as they were received.

The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.

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Results Summary

Report No.: 22-19152-1

Customer Reference: Not Supplied

Customer Order No: 22040871

Customer Sample No	BH1	BH2	BH3
Customer Sample ID	22040871-001-5	22040871-002-5	22040871-003-5
RPS Sample No	488452	488453	488454
Sample Type	WATER	WATER	WATER
Sampling Date	11/04/2022	11/04/2022	11/04/2022
Sampling Time	11:30	12:00	12:30

Determinand	CAS No	Codes	SOP	Units	RL			
butyl diglycol	112-34-5	N	in house	mg/l	10	< 10.0	< 10.0	< 10.0
N,N-didecyl-N,N-dimethylammonium chloride (DDAC)	7173-51-5	N	in house	ug/l	10	< 10.0	< 10.0	< 10.0
ethanolamine	141-43-5	N	in house	mg/l	20	< 20.0	< 20.0	< 20.0
permethrin	52645-53-1	N	in house	ug/l	0.1	< 1.00	< 1.00	< 1.00
propiconazole	60207-90-1	N	in house	ug/l	0.1	< 0.10	< 0.10	< 1.00
tebuconazole	107534-96-3	N	in house	ug/l	0.1	< 0.10	< 0.10	< 1.00

Comments

Report No.: 22-19152-1

Customer Reference: Not Supplied

Customer Order No: 22040871

Job	Description	Job Comments
22-19152	3 water samples	Reporting limits raised as necessary due to matrix interference.

Deviating Samples

Report No.: 22-19152-1

Customer Reference: Not Supplied

Customer Order No: 22040871

Our policy on Deviating Samples has been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling. Samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be compromised.

Where no sampling date was supplied, samples have been declared to be deviating. If the date can be supplied, results may be reissued if assessed not deviating.

Where the sample container used was unsuitable or broken, the sample is flagged as deviating and re-sampling/re-submission may be required.

RPS No.	Customer No.	Customer ID	Date Sampled	Containers Received	Deviating	Reason for Deviation
488452	BH1		11/04/2022	1 litre amber glass bottle	No	
488453	BH2		11/04/2022	1 litre amber glass bottle	No	
488454	BH3		11/04/2022	1 litre amber glass bottle	No	

Report No.: 22-19152-1

Key Code	Description
U	UKAS Accredited Test - UKAS accreditation is only implied if the report carries the UKAS logo
F	UKAS Flexible Scope Test
M	MCERTS Accredited Test - MCERTS accreditation is only implied if the report carries the MCERTS logo
N	Not Accredited Test
O	Marine Management Organisation (MMO) Validated
S	Subcontracted to approved laboratory
US	Subcontracted to approved laboratory UKAS Accredited for the test
MS	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
SI	Subcontracted to internal RPS Group laboratory
USI	Subcontracted to internal RPS Group laboratory UKAS Accredited for the test
MSI	Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test
I/S (in results)	Insufficient Sample
U/S (in results)	Unsuitable Sample
S/C (in results)	See Comments
ND (in results)	Not Detected
AD (in units)	Results are expressed on an air-dried basis at 30 °C
DW (in units)	Results are expressed on a dry weight basis at 105 °C

Sample Type	Sample Retention and Disposal Period
Foodstuff	1 month (if frozen) from the issue date of this report
Waters	2 weeks from the issue date of this report
Other Liquids	1 month from the issue date of this report
Solids / Soils	1 month from the issue date of this report
Sediments	1 month from the issue date of this report

Note: Sample retention may be subject to agreement with the customer for particular projects

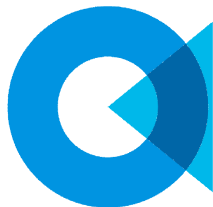
Where the dry solids value of a sample is low (<50%), reporting limits are automatically raised for all determinants analysed on an as-received basis.

Soil Typing	Description
Type 1	Clay - Brown
Type 2	Clay - Grey/Black
Type 3	Sand
Type 4	Top Soil (Standard)
Type 5	Top Soil (High Peat)
Type 6	Made Ground (>50% Clay)
Type 7	Made Ground (>50% Sand)
Type 8	Made Ground (>50% Top Soil)
Type X	Other

Certificate Notes	Description
Note 1	This test report shall not be reproduced except in full, without written approval of the Laboratory.
Note 2	Unless otherwise stated, results are not corrected for analytical recoveries.
Note 3	All samples were received in good condition unless otherwise stated. Results provided by the Laboratory are based on samples submitted by clients. Once submitted, samples requiring analysis are stored at 5 ± 3°C. The Laboratory cannot be held responsible for the storage, condition or preservation of samples prior to arrival.
Note 4	Samples were taken by the customer and, unless otherwise stated, sampling locations were not supplied.
Note 5	Soil descriptions are given in order to provide a log of sample matrices submitted and are not intended as full geological descriptions.
Note 6	Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

Note for results expressed on an air-dried basis: Results for soil samples are reported based on the dry weight of soil which has been air-dried in open, shallow trays at temperatures below 30 °C and subsequently ground and sieved to pass through a nominal 710 µm aperture sieve. Prior to any grinding, any material which is retained on a sieve of mesh size 4.75mm is discarded. In most cases, analysis is carried out directly on these prepared soils.

Note: Where the following information is included in this certificate, it has usually been supplied by the customer: Customer Sample ID, Sample Location, Sample Depth, Sampling Date and Sampling Time. The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.



Client: SOCOTEC Consultancy North
 Project Name: BSW Timber Newbridge
 Project No: 22040871
 Date Issued: 06/05/2022

Deviating Sample Report

Sample Reference	Text ID	Reported Name	Incorrect Container	Incorrect Label	Headspace	Incorrect/No Preservative	No Sampling Date	Holding Time
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Analysis Method

<u>Analysis</u>	<u>Analysis Type</u>	<u>Analysis Method</u>
ICPMSW (Dissolved)	METALS	Filtered
ICPWATVAR (Dissolved)	METALS	Filtered
PHCONDW	INORGANIC	Unfiltered
SUB005	SUBCON	
WSLM11	INORGANIC	Unfiltered

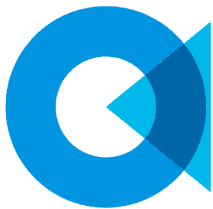
Result Report Notes

Letters alongside results signify that the result has associated report notes.
 The report notes are as follows:

Letter

Note

A	Due to the matrix of the sample the laboratory has had to deviate from our standard protocols to be able to process the sample and provide a result. Where applicable the accreditation has been removed and this should be taken into consideration when utilising the data.
B	The QC associated with this result has not wholly met the QMS requirements, the accreditation has therefore been removed. However, the Laboratory has confidence in the performance of the method as a whole and that the integrity of the data has not been significantly compromised.
C	Due to matrix interference the internal standard and/or surrogate has not met the QMS requirements. This should be taken into consideration when utilising the data.
D	A non-standard volume or mass has been used for this test which has resulted in a raised detection limit.
E	Due to recoveries beyond our calibration range and following the maximum size of dilution allowed, the result cannot be quantified and as such the result will appear as a greater than symbol (>) with the accreditation removed. This data should be used for indicative purposes only.
F	Based on the sample history, appearance and smell a dilution was applied prior to testing. Unfortunately, the result is either above (>) or below (<) our calibration range. Results above our calibration range have accreditation removed. The data should be used for indicative purposes only.
G	The day 5 oxygen reading was below the capability of the instrument to detect, and therefore the calculated BOD has been reported unaccredited for guidance purposes only.



Client: SOCOTEC Consultancy North
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HWOL Acronym Key

<u>Acronym</u>	<u>Description</u>
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e everything extracted by the solvent(s)
CU	Clean up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
+	Operator to indicate cumulative e.g. EH_CU+HS_1D_Total

Additional Information

This report refers to samples as received, and SOCOTEC UK Ltd takes no responsibility for accuracy or competence of sampling by others.

Results within this report relate only to the samples tested.

In the accreditation column of analysis report the codes are as follows:

- U = UKAS accredited analysis
- M = MCERT accredited analysis
- N = Unaccredited analysis

Any units marked with ^ signify results are reported on a dry weight basis of 105° c.

All Air Dried and Ground Samples (ADG) are oven dried at less than 35° c.

This report shall not be reproduced except in full and with approval from the laboratory.

Opinions and interpretations given are outside the scope of our UKAS accreditation.

Any samples marked with * are not covered by our scope of UKAS accreditation. If applicable, further report notes have been added.

Any solid samples where the Major Constituents are not one of the following (Sand, Silt, Clay, Made Ground) are not one of our accredited matrix types.

Any samples marked with ‡ have had MCERTS accreditation removed for this result

Any samples marked with a tick in the deviant table is deviant for the specific reason.

Any samples reported as IS, NA, ND mean the following:

- IS = Insufficient Sample to complete analysis
- NA = Sample is not amenable for the required analysis
- ND = Results cannot be determined

Our deviating sample report does not include deviancy information for Subcontracted analysis. Please see the report from the Subcontracted lab for information regarding any deviancies for this analysis.

End of Certificate of Analysis