



PHASE IV REMEDIATION VERIFICATION REPORT
FOR THE PROPOSED RESIDENTIAL DEVELOPMENT
AT
1 BEAUCHAMP ROAD, PLYMOUTH, DEVON, PL2 3PZ
FOR
SJ DEVELOPMENTS (SW) LTD

26th January 2024

Job No. 18250 / Ph.IV / R1

John Grimes Partnership Ltd ♦ Leonards Road Ivybridge Devon PL21 0RU

♦ www.johngrimes.co.uk ♦ [REDACTED] ♦ Registration No: 4184549

Directors:

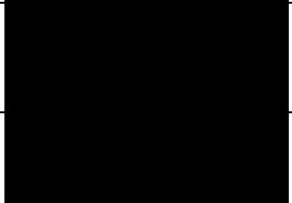
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Report Status:	REPORT		
Project Number:	18250 / Ph.IV / R1		
	Engineer	Signature	Date
Report by:	B. Spear BSc (Hons), MSc Geo-Environmental Engineer		26/01/2024
Reviewed by:	A. Robertson BEng (Hons) ACSM FGS Associate Director		26/01/2024
For and on behalf of John Grimes Partnership Ltd.			

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1.0 INTRODUCTION

1.1 Terms of Reference

Acting on instructions received from SJ Developments (SW) Ltd, John Grimes Partnership Ltd. (JGP) has prepared a Phase IV Verification Report for the proposed residential development within the grounds of No. 1 Beauchamp Road, Plymouth, PL2 3PZ. A site location map is provided in Figure 1.

This report has been produced to address Condition 7 Contaminated Land of Planning Application No: 13/02037/FUL. As part of the planning application, a Phase 2 Ground Investigation for the site was carried out by JGP. The ground investigation identified elevated concentrations of arsenic and lead within Made Ground across the site, which was considered to pose a potential risk to human health for the proposed end use. Remediation measures were provided by JGP, which recommended a clean capping layer comprising 600mm of clean imported soils over a geotextile hazard marker membrane.

SJ Developments have implemented this clean capping layer to prevent contact between the end user and underlying contaminated soils on site. This report describes the validation works undertaken by JGP. The objective of this report is to verify that the remediated site is suitable for its intended use.

1.2 Scope of Works

The residential development is nearing completion. Once completed, the development will comprise a two-storey detached dwelling with garden, patio and driveway. Investigation was by means of trial pits within the proposed garden area. A soil sample was taken for contamination testing at an accredited laboratory.

A plan showing the development layout and remediated areas is provided in Figure 2.

1.3 Previous Reports

Reference should be made to the following reports for which this verification report is based:

Phase 1 Land Quality Assessment by Hilton-Brooks-Aust (Dated July 2012; Ref: HBA 12113)

John Grimes Partnership Ltd. 'Phase II Ground Investigation Report' (Ref: 16642 / PhII / R1 dated 19th October 2020).

1.4 Third Party Rights and Other Limitations

This report is issued to SJ Developments (SW) Ltd and does not confer or purport to confer on any third party any benefit or any right pursuant to the Contracts (Rights of Third Parties) Act 1999.

Reasonable endeavour has been made to provide reliable verification of the site remedial works.

1.5 Terminology and Nomenclature

Terminology and nomenclature used in this report is that described and generally used in the relevant EuroCodes and British Standard Codes of Practice listed in the References section of this report.

2.0 PROPOSED REMEDIAL WORKS

As discussed in Section 1.1, the soil sampling undertaken at the site in 2020 identified elevated concentrations of arsenic and lead, which were considered to pose a potential risk to human health for the proposed development. The potential pathways of concern to the end user are related to exposure to soils within the private garden area of the development, as follows:

- Dermal contact, ingestion and inhalation of soil and dust
- Ingestion of site-grown produce and attached soil

In order to break the identified pathways of concern for human health, the proposed remedial options specified for the garden area was to either:

- Constructing raised bed (by placing an appropriate membrane and imported clean capping soil layer over current surface soils);
- Strip the top 600mm of existing soils and replace with the imported clean capping soils to maintain current ground levels.

Given the pathways of concern, this material can remain below hardstanding. These remedial measures will prevent any contact between the end user and underlying contaminated soils within the private garden area.

It is understood that the top 600mm of existing soils were removed from site to an appropriate waste facility (receipts provided in Appendix 2). Given no documentation for the clean capping soils were provided; chemical analysis has been undertaken to verify its suitability for use as a capping layer (discussed below).

The revised site-specific conceptual model for human health with the remedial measures in place is provided in Appendix 3.

3.0 VERIFICATION OF REMEDIAL WORKS

An engineer from JGP visited the site on 16th November 2023 once the capping layer had been placed and two pits were excavated in the garden area. These were dug in order to demonstrate the depth of the capping material and presence of the separation membrane. The locations of the trial pits are shown on Figure 2. The capping soils were consistent in composition and appearance in both pits and comprises grey brown clayey fine to coarse sandy fine to coarse GRAVEL of angular platy mudstone.

The remedial works have been documented in a photographic record, included in Appendix 4, which includes photographs provided by the client during placement of the separation membrane.

The depth of the clean site-won soil placed above the geomembrane varied slightly due to settlement of the soil with depths ranging between 500mm to 550mm. It is understood that a further 100mm of capping has been obtained using stone aggregate, sand blinding and AstroTurf, which was placed at a later date in the garden area once the building works were completed to bring the total thickness of capping in the garden area to at least 600mm.

A geomembrane was observed at the base of the clean cover in both trial pits. The presence of the geomembrane between any contaminated soil and the clean cover will remove the risk of any mixing between the two materials.

The area of driveway was not completed during the visit, however photographs provided by the client at a later date (presented in Appendix 4) show the area has now been remediated with the separation membrane beneath paving or gravel hardstanding.

3.1 Chemical Analysis

One sample of the imported clean capping soil was scheduled for an 'Environmental Suite' of analysis, which covers a broad range of common contaminants, as follows:

Total Metals (Arsenic, Boron, Cadmium, Chromium (total and hexavalent), Copper, Lead, Mercury, Nickel, Zinc)

Fully speciated Petroleum Hydrocarbons (TPHCWG) including BTEX and MTBE
Speciated Polycyclic Aromatic Hydrocarbons (PAH – 16 United States
Environmental Protection Agency priority compounds)

Asbestos screen and ID

Soil Organic Matter (SOM)

pH

Certificates of analysis are provided in Appendix 5.

The development comprises a residential dwelling with private garden area (AstroTurf rather than topsoil). The results of chemical analysis have therefore been compared with published guideline values for a standard ‘residential without homegrown produce’ land use. The critical receptor for this land use is a 0-6-year-old female child. The guideline values used include Soil Guideline Values (SGVs) published by the Environment Agency (2009), Suitable for Use Levels (S4ULs) published by LQM / CIEH (2015) and Category 4 Screening Levels (C4SLs) published by DEFRA (2014).

3.1.1 Metals

The measured concentrations, together with their corresponding generic guideline values, are summarised in Table 1.

TABLE 1: SUMMARY OF METAL CONCENTRATIONS IN SOILS AND GUIDELINE V/						
Residential Land Use	Maximum Measured Conc.			EA	LQM/CIEH	DEFRA
Metal	Location	Depth (m)	mg/kg	SGV (mg/kg)	S4UL (mg/kg)	C4SL (mg/kg)
Arsenic	TP01	0.4	21	32	40	40
Boron			0.3		11,000	
Cadmium			<0.2	10	85	149
Chromium			36		910	
Chromium VI			<1.8		6	21
Copper			35		7,100	
Lead			51			310
Inorganic Mercury			<0.3	170	56	
Nickel			54	130	180	
Zinc			120		40,000	

All metal concentrations are below their corresponding guideline values for a residential without homegrown produce land use.

3.1.2 Polycyclic Aromatic Hydrocarbons (PAH)

The sample was tested for speciated polycyclic aromatic hydrocarbons (PAH) to identify the concentrations of the 16 United States Environmental Protection Agency priority compounds. Concentrations are below detection limits (0.8mg/kg).

3.1.3 *Petroleum Hydrocarbons*

The sample was tested for Total Petroleum Hydrocarbons (TPH) with the sample fully speciated to provide aliphatic and aromatic fractions (TPHCWG). Concentrations are below detection limits (<10.0mg/kg).

3.1.4 *BTEX & MBTE*

The sample was tested for Monoaromatics and Oxygenates. Concentrations are below detection limit (<5.0 µg/kg).

3.1.5 *Asbestos*

The soil sample recorded 'No Asbestos Detected' which is considered equivalent to a concentration less than 0.001%, below which soils are not considered as containing asbestos under the Control of Asbestos at Work Act (2012).

3.1.6 *Soil Organic Matter*

The soil organic matter (SOM) for the sample was measured as 1.3%.

3.1.7 *pH*

The pH for the sample was measured as 7.3, indicating the imported soils are generally neutral.

4.0 FINAL SITE CONDITION

The remedial works that have been completed are described within this report. The potential pathways of concern to the critical receptor have been removed:

The risk of direct soil ingestion has been removed by the provision of a physical barrier between the underlying contaminated soil and the critical receptor.

The risk related to growing of edible produce on the site has been mitigated by the provision of a membrane between the capping layer /AstroTurf cover and the underlying contaminated soil.

The site is no longer considered to pose a significant risk to human health from arsenic and lead.

The remediated site is therefore considered to be suitable for occupation by residents with a private garden, thereby meeting the final remediation objective for the site.

REFERENCES

British Standards

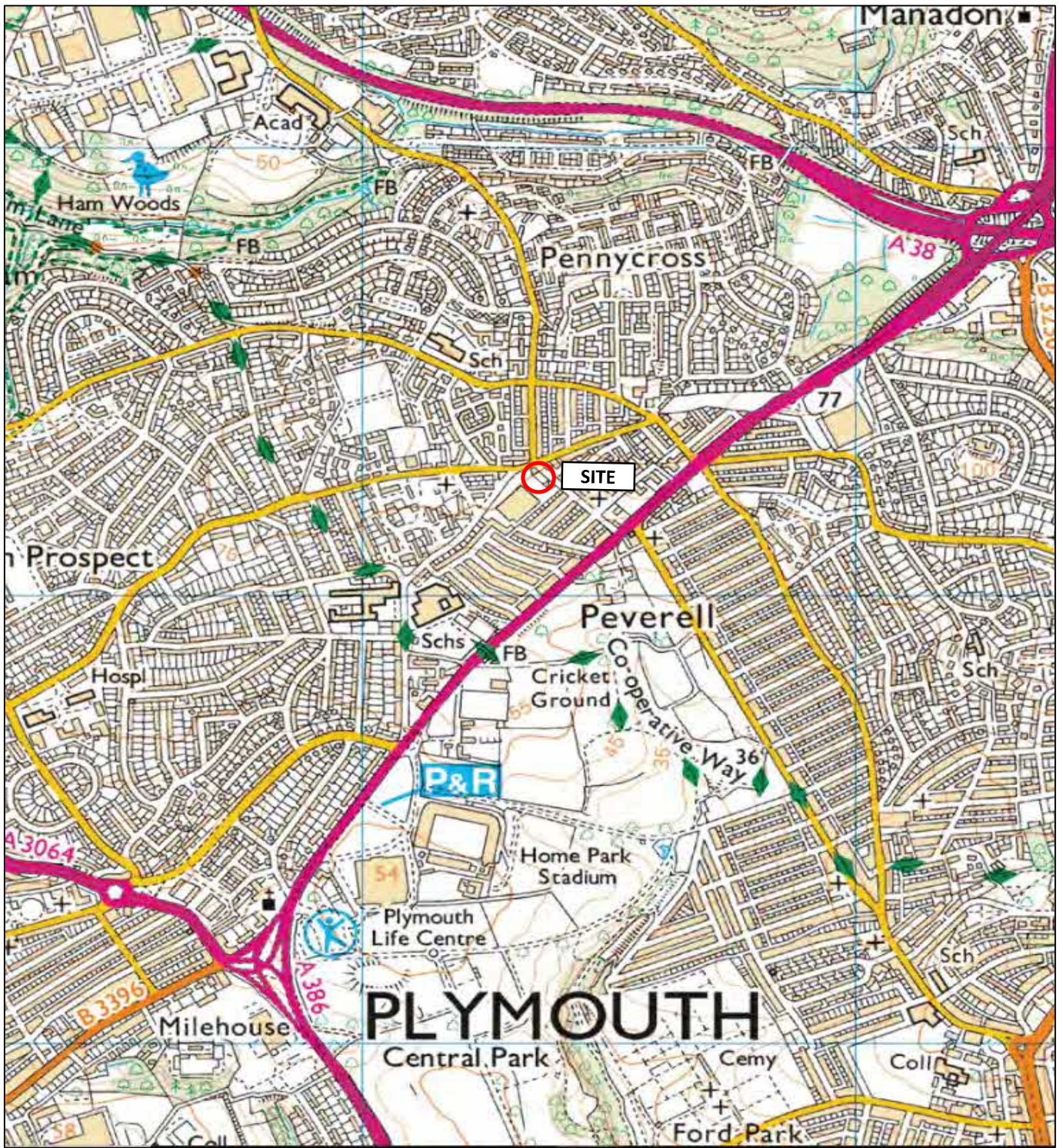
- BS 5930 (2015)+A1:2020 Code of Practice for Ground Investigations
- BS 10175 (2011) +A2:2017 Investigation of Potentially Contaminated Sites
- BS ISO 18400-203:2018 Soil Quality –Sampling - Investigation of potentially contaminated sites.
- BS ISO 18400-202:2018 Soil quality –Sampling. Part 202: Preliminary investigations
- BS EN ISO 21365:2020 Soil Quality. Conceptual site models for potentially contaminated sites

Other Sources

- Environment Agency (2021) Land Contamination Risk Management
- Environment Agency (2004) CLR 11 - Model Procedures for the Management of Land Contamination
- Environment Agency (2002) CLR 8 - Potential Contaminants for the Assessment of Land
- Environment Agency (2009) Science Report Series SC050021 –Soil Guideline Values
- LQM / CIEH (2014) Suitable 4 Use Levels for Human Health Risk Assessment of Land Affected by Contamination
- DEFRA / CL:AIRE (2013/2014) SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination

FIGURE 1

Figure 1: Site Location Map



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Job	1 Beauchamp Road, Plymouth	 Consulting Engineers & Engineering Geologists Tel 01752 690533
Title	Site Location Map	
Client	SJ Developments (SW) Ltd	drawn BS checked AR date 26-Jan-24 scale nts
		Job No 18250 Figure No 1 rev R1

FIGURE 2



KEY



REMIEDIATED GARDEN AREA

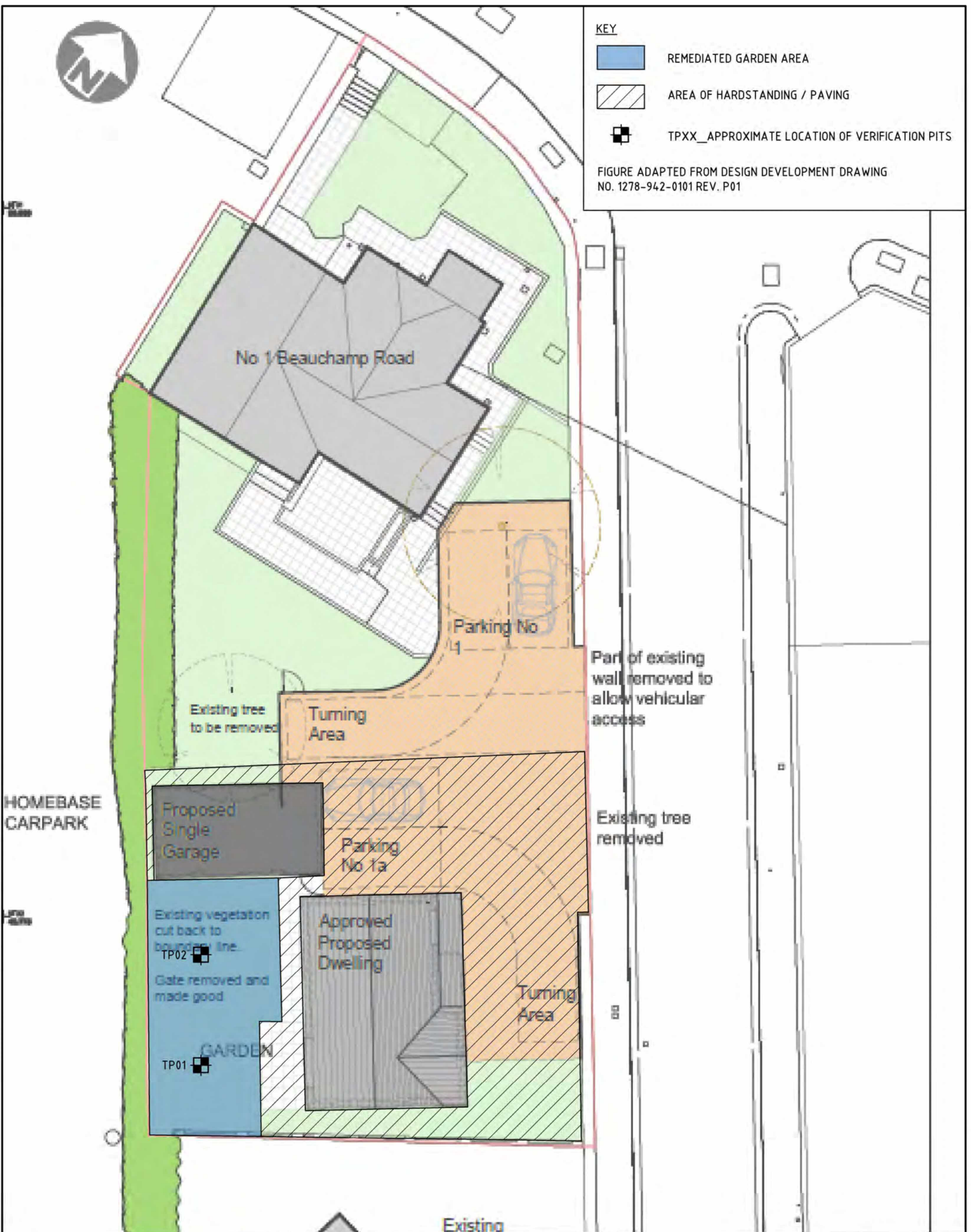


AREA OF HARDSTANDING / PAVING



TPXX_APPROXIMATE LOCATION OF VERIFICATION PITS

FIGURE ADAPTED FROM DESIGN DEVELOPMENT DRAWING NO. 1278-942-0101 REV. P01



				Client SJ DEVELOPMENTS (SW) LTD		Project 1 BEAUCHAMP ROAD PLYMOUTH DEVON			
				Status REPORT		Title REMEDICATION PLAN			
				© Copyright reserved		First Issue Signatures		Leonard's Road, Ivybridge, Devon, PL21 0RU Tel: +44 (0)1752 690533 Fax: +44 (0)1752 690570 post@johngrimes.co.uk www.johngrimes.co.uk	
				Scales NTS		Author B SPEAR		Project No. 18250	
				Original Size A3		Checker A ROBERTSON		Figure No. 2	
								Rev. R1	
R1	REPORT ISSUE	20NOV23	BS	AR					
Issue	Description	Date	Drwn	Chkd					

APPENDICES

APPENDIX 1

APPENDIX 1 – REPORT LIMITATIONS

1. This report has been produced in compliance with the agreed scope of work between John Grimes Partnership Ltd. (JGP) and SJ Developments (SW) Ltd [The Client].
2. This report has been prepared for the benefit of The Client and associated advisors in relation to the proposed residential development within the grounds of 1 Beauchamp Road, Plymouth, PL2 3PZ. The report shall not be relied upon for any other situation; neither shall it be transferred to any other party without the written agreement of JGP. JGP accepts no responsibility or liability for the use of this report for any purpose or any project except for that for which it was specifically prepared.
3. The conclusions and advice provided in this report are based on:
 - Current best practice and legislation [JGP accepts no responsibility or liability for any change in best practice advice or statute. In the event of additional information becoming available, improved practices or changes in legislation, amendment or re-interpretation of the assessment or report (in whole or in part) may be necessary].
 - Sound engineering judgement and assessment of observations undertaken in accordance with the agreed scope of works. It does not take into account the perceptions of other involved and interested parties.
4. Ground conditions may significantly vary across the site and although the reasonable due diligence of a ground investigation practitioner will be used in recommending and designing an investigation:
 - a. This may be modified/limited, for example, by The Client's budget and/or physical site limitations.
 - b. Ground conditions across any site can vary significantly and rapidly; although the ground investigation is reasonably designed to take into account any such variations, significant changes may not always be identified by the investigation by virtue of what it is, that is it only provides a limited snapshot of the ground at depth.
 - c. Where JGP suspects that there may be some anomaly, JGP will bring this to The Client's attention and seek their further instruction. In such situations, which are very rare, The Client will remain responsible for funding any augmenting investigations.
5. Contamination and pollution often exist as small discrete zones and there can be no absolute certainty that any or all of such areas have been located and sampled. A desk top study and other non-intrusive enquiry investigation may identify the probability of such localised contamination and will identify the risk and a strategy as far as reasonably possible to deal with that risk.
6. Any information and data supplied by third parties (as detailed in the report) has been interpreted in accordance with guidance notes and limitations provided by these third parties. Although JGP has reasonable faith in the findings of third-party reports, JGP cannot be held responsible for any inaccuracies which may exist. In addition, interpretation of historic data/mapping should only be considered as indicative.
7. In accordance with our Conditions of Engagement, any samples collected during this investigation and held at JGP will be disposed of 2 weeks after the issue of this report unless instructed otherwise. The onus is on the client to advise JGP of any requirement to store samples beyond this 2 week period. Any additional storage will incur a small charge. JGP can provide guidance on when longer-term storage might be necessary and the associated costs.
8. JGP believes that providing information about limitations is essential to help the client identify and manage risks.

APPENDIX 2

Producer's/Holder's/Consignor's Copy

PART A Notification details

1. Consignment

Note code:

D R E R E C / B E A 0 3

2. The waste described below is to be removed from (name, address, postcode, telephone, email, facsimile):

Damien Pemberton - 01444 253333
1 Beauchamp Road,
Plymouth, PL2 3PZ

4. The waste will be taken to (name, address and postcode):

UK Remediation Ltd - EPR/XP3734QY
Wheal Jane Old Mine Works
Baldhu, Truro, Cornwall TR3 6EE

5. The waste producer was (if different from 2) (name, address, telephone, email, facsimile):

As A2

3. Tipping Ref

C T F 5 7 1 3 . 0 1

PART B Description of Waste

1. The process giving rise to the waste(s) was:

Excavation

2. SIC for the process giving rise to the waste:

4 2 1 1 0

3. WASTE DETAILS (where more than one waste type is collected all the information given must be completed for each EWC identified)

Description of waste	List of wastes (EWC Code 6 digits)	Quantity (kg)	The chemical/biological components in the waste and their concentrations are:		Physical form/gas liquid, solid, powder, sludge, or mixed	Hazard coded/d	Container type, number, and size
			Component	Concentration (% or mg/kg)			
Contaminated soil	1 7 0 5 0 3*	18,000kg	Lead	1,300mg/kg	Solid	HP7,14	8W Tipper
			Zinc	400mg/kg			

The information given below is to be completed for each EWC identified

EWC Code	UN Identification Number(s)	Proper shipping name(s)	UN class(es)	Packing Groups	Special handling requirements

PART C Carriers Certificate

I certify that I today collected the consignment and that the details in A2, A4 and B3 are correct and I have been advised of any specific handling requirements

Where this note comprises part of a multiple collection the round number and collection number are:

/

Carrier name:

LEE FALCETT
On behalf of (name, address, postcode, telephone, email, fax)
DDE (SW) Ltd
Dre Yard, Recycling Way,
Smithaleigh, Plymouth, PL7 5FJ

Carrier registration number:

C B D U 1 2 4 2 6 1

Vehicle registration number:

NU 71 VHX

Date: 06/01/2023

Signature:

[Signature]

Time: [] [] [] []

PART D Consignor's certificate

I certify that the information in A, B and C above are correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures, all of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1. Consignor name:

On behalf of (name, address, postcode, telephone, email, fax)
Damien Pemberton - 01444 253333
1 Beauchamp Road,
Plymouth, PL2 3PZ

Signature:

[Signature]

Date: [] [] [] [] [] [] Time: [] [] [] []

PART E Consignee's Certificate

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/ rejected	Waste management operation
170503	18000	A	R03, R05

1. I received this waste at the address given in A4 on:

Date: 06/01/2023 Time: 09:00

2. Vehicle Reg:

NU 71 VHX

Name: OWEN MAPES

On behalf of (name, address, postcode, telephone, email, fax):

UK Remediation Ltd
Wheal Jane Old Mine Works
Baldhu, Truro, Cornwall TR3 6EE
Tel: 0117 924 4990

3. Where waste is rejected please provide details:

[]
[]
[]

I certify that waste permit/exempt waste operation number:

EPR/XP3734QY

authorises the management of the waste described in B at the address given in A4.

Where the consignment forms part of a multiple collection, as identified in Part C, certify that the total number of consignments forming the collection are:

[]

Signature:

[Signature]

Date: 06/01/2023 Time: 09:00



Dre-

Dorton Group
re-cycled

DUTY OF CARE NOTE

06702

Dde (SW) Ltd. - Challonsleigh Recycling Facility, Dre Yard, Recycling Way,
Smithaleigh, Plymouth PL7 5FJ • Tel: 01752 425159 • email: info@dre-recycling.com
www.Dre-recycling.com • Waste Carriers Licence No.: CBDU124261

Dorton Demolition & Excavation Ltd. - Station Goods Yard, Station Road, Burgess Hill,
West Sussex RH15 9DG • Tel: 01444 253333 • email: mail@dortongroup.com
www.dortongroup.com • Waste Carriers Licence No.: CBDU124235

CARRIER DETAILS	DRIVER'S NAME LEE FAWCETT							DATE 05 01 23						
	VEHICLE REG. NO71 VHX							GROSS WEIGHT 327						
SITE DETAILS	SITE ADDRESS DAN BOUCHAMP RD PL							NETT WEIGHT						
	HAULIER DRE							TIME OF LOADING						
	TAKEN TO WHEEL JANE YARD TRURO							VOLUME 167						
MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)	MATERIAL Tick appropriate box													
		CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL - CLEAN	SOIL - CONTAM.	SCRAP	GREEN WASTE	OTHER
	EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	04-07	02-01	
	SIC CODE	43110			LANDFILL/TRANSFER SITE EPR/XP3734QY									
DESCRIPTION	167 17-05-03							WAITING TIME ARRIVED _____ DEPARTED _____						

DECLARATION - Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

DRIVER'S SIGNATURE _____

CUSTOMER'S SIGNATURE _____

CUSTOMER'S NAME _____

COMPANY _____

Executed subject to Dorton Demolition & Excavation Ltd's Standard Conditions of Trading
N.B. Customers ordering vehicles off the road do so entirely on their own responsibility.

WHITE - Customer GREEN - Landfill/Transfer Site YELLOW - Office PINK - Waste Stream

Dre-

Dorton Group
re-cycled

DUTY OF CARE NOTE

06701

Dde (SW) Ltd. - Challoleigh Recycling Facility, Dre Yard, Recycling Way, Smithaleigh, Plymouth PL7 5FJ • Tel: 01752 425159 • email: info@dre-recycling.com
www.dre-recycling.com • Waste Carriers Licence No.: CBDU124261

Dorton Demolition & Excavation Ltd. - Station Goods Yard, Station Road, Burgess Hill, West Sussex RH15 9DG • Tel: 01444 253333 • email: mail@dortongroup.com
www.dortongroup.com • Waste Carriers Licence No.: CBDU124235

CARRIER DETAILS	DRIVER'S NAME	LEE FALCETT													DATE	5-1-23	
	VEHICLE REG.	NO71VHX													GROSS WEIGHT		
SITE DETAILS	SITE ADDRESS	DAN BEAUCHAMP RD R/L													NETT WEIGHT		
	HAULIER	DRE													TIME OF LOADING		
MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)	TAKEN TO	WHEEL JANE													VOLUME	167	
	MATERIAL Tick appropriate box	CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL - CLEAN	SOIL - CONTAM.	SCRAP	GREEN WASTE	OTHER			
EWC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	04-07	02-01					
SIC CODE	43110		LANDFILL/TRANSFER SITE														
DESCRIPTION	167		EPR/XP3734QY													WAITING TIME ARRIVED DEPARTED	

DECLARATION - Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 21 of The Waste (England and Wales) Regulations 2011.

DRIVER'S SIGNATURE _____

CUSTOMER'S SIGNATURE _____

CUSTOMER'S NAME _____

COMPANY _____

Executed subject to Dorton Demolition & Excavation Ltd's Standard Conditions of Trading
N.B. Customers ordering vehicles off the road do so entirely on their own responsibility.
WHITE - Customer GREEN - Landfill/Transfer Site YELLOW - Office PINK - Waste Stream

DRE WC1

Hazardous Waste Regulations 2005 : Consignment Note (CR-8-050)

UK Remediation Ltd

Producer's/Holder's/Consignor's Copy

PART A Notification details

1. Consignment Note code: **D R E R E C / B E A O 2**

2. The waste described below is to be removed from (name, address, postcode, telephone, email, facsimile):
Damien Pemberton - 01444 253333
1 Beauchamp Road,
Plymouth, PL2 3PZ

3. Tipping Ref: **C T F 5 7 1 3 . 0 1**

4. The waste will be taken to (name, address and postcode):
UK Remediation Ltd - EPR/XP3734QY
Wheal Jane Old Mine Works
Baldhu, Truro, Cornwall TR3 6EE

5. The waste producer was (if different from 2) (name, address, telephone, email, facsimile):
As A2

PART B Description of Waste

1. The process giving rise to the waste(s) was: **Excavation**

2. SIC for the process giving rise to the waste: **4 2 . 1 1 0**

3. WASTE DETAILS (where more than one waste type is collected all the information given must be completed for each EWC identified)

Description of waste	List of wastes (EWC Code 6 digits)	Quantity (Kg)	The chemical/biological components in the waste and their concentrations are:		Physical form (gas liquid, solid, powder, sludge, or mixed)	Hazard codes(s)	Container type, number, and size.
			Component	Concentration (% or mg/kg)			
Contaminated Soil	1 7 0 5 0 3*	18,000Kg	Lead	1,300mg/kg	Solid	HP7,14	8W Tipper
			Zinc	400mg/kg			

The information given below is to be completed for each EWC identified

EWC Code	UN Identification Number(s)	Proper shipping name(s)	UN class(es)	Packing Groups	Special handling requirements

PART C Carriers Certificate

I certify that I today collected the consignment and that the details in A2, A4 and B3 are correct and I have been advised of any specific handling requirements

Where this note comprises part of a multiple collection the round number and collection number are:
1

Carrier name: **LEE FALCETT** Carrier registration number: **C B D U 1 2 4 2 6 1**

On behalf of (name, address, postcode, telephone, email, fax):
DDE (SW) Ltd
Dre Yard, Recycling Way,
Smithaleigh, Plymouth, PL7 5FJ

Vehicle registration number: **NO71VHX**

Date: **05/01/2023** Time: _____

Signature: _____

PART D Consignor's certificate

I certify that the information in A, B and C above are correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1. Consignor name: _____
On behalf of (name, address, postcode, telephone, email, fax):
Damien Pemberton - 01444 253333 DAN
1 Beauchamp Road,
Plymouth, PL2 3PZ

Signature: _____
Date: **05/01/2023** Time: **09:15**

PART E Consignee's Certificate

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation
170503	18000	A	205, 205

1. I received this waste at the address given in A4 on: Date: **05/01/2023** Time: **09:45**

2. Vehicle Reg: **NO71VHX** Name: **OWEN MATEL**
On behalf of (name, address, postcode, telephone, email, fax):
UK Remediation Ltd
Wheal Jane Old Mine Works
Baldhu, Truro, Cornwall TR3 6EE
Tel: 0117 924 4990

3. Where waste is rejected please provide details:

I certify that waste permit/exempt waste operation number: **EPR/XP3734QY**
authorises the management of the waste described in B at the address given in A4.
Where the consignment forms part of a multiple collection, as identified in Part C, I certify that the total number of consignments forming the collection are: _____

Date: **05/01/2023** Time: **09:45**

Dre-
Dorton Group
re-cycled

DUTY OF CARE NOTE 06703

Dde (SW) Ltd. - Chailonsleigh Recycling Facility, Dre Yard, Recycling Way, Smithaleigh, Plymouth PL7 5FJ • Tel: 01752 425159 • email: info@dre-recycling.com www.Dre-recycling.com • Waste Carriers Licence No.: CBDU124261
Dorton Demolition & Excavation Ltd. - Station Goods Yard, Station Road, Burgess Hill, West Sussex RH15 9DG • Tel: 01444 253333 • email: mail@dortongroup.com www.dortongroup.com • Waste Carriers Licence No.: CBDU124235

CARRIER DETAILS	DRIVER'S NAME	LEE FALCETT	DATE	05-01-03										
	VEHICLE REG.	NU71 VHX	GROSS WEIGHT	327										
SITE DETAILS	SITE ADDRESS	DAN BEACHAMP RD Ply	NETT WEIGHT											
	HAULIER	DRE	TIME OF LOADING											
	TAKEN TO	WHEEL JANE TRURO	VOLUME	167										
MATERIAL DETAILS (TO BE COMPLETED BY DRIVER)	MATERIAL	Tick appropriate box												
		CONC./BRICK	BITUMINOUS	SOFT STRIP	FERROUS	WOOD	PLASTERBOARD	ASBESTOS FIBROUS	ASBESTOS BONDED	SOIL - CLEAN	SOIL - CONTAM.	SCRAP	GREEN WASTE	OTHER
	EWIC 17	01-07	03-02	09-04	04-05	02-01	08-02	06-01	06-05	05-04	05-03	04-07	02-01	
	SIC CODE	LANDFILL/TRANSFER SITE												
		43110		EPR XP3734QY										
	DESCRIPTION	167 17-05-03		WAITING TIME										
				ARRIVED	DEPARTED									

DECLARATION - Certified that the above particulars are true and relate to the load being conveyed in the vehicle described. Hazardous materials also require a hazardous waste consignment note to be completed, and where appropriate ADR to be complied with. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of The Waste (England and Wales) Regulations 2011.

DRIVER'S SIGNATURE _____
 CUSTOMER'S SIGNATURE _____
 CUSTOMER'S NAME _____
 COMPANY _____

Executed subject to Dorton Demolition & Excavation Ltd's Standard Conditions of Trading
 N.B. Customers ordering vehicles off the road do so entirely on their own responsibility.
 WHITE - Customer GREEN - Landfill/Transfer Site YELLOW - Office PINK - Waste Stream

Hazardous Waste Regulations 2005 : Consignment Note (CR8-050)

UK Remediation Ltd

Carrier's Copy

PART A Notification details

1. Consignment Note code: **D R E R E C / B E A 0 1**

2. The waste described below is to be removed from (name, address, postcode, telephone, email, facsimile):
 Damien Pemberton - 01444 253333
 1 Beauchamp Road,
 Plymouth, PL2 3PZ

3. Tipping Ref: **C T F 5 7 1 3 . 0 1**

4. The waste will be taken to (name, address and postcode):
 UK Remediation Ltd - EPR/XP3734QY
 Wheal Jane Old Mine Works
 Baldhu, Truro, Cornwall TR3 6EE

5. The waste producer was (if different from 2) (name, address, telephone, email, facsimile.):
 As AZ

PART B Description of Waste

1. The process giving rise to the waste(s) was: **Excavation**

2. SIC for the process giving rise to the waste: **4 2 . 1 1 0**

3. WASTE DETAILS (where more than one waste type is collected all the information given must be completed for each EWC identified)

Description of waste	List of wastes (EWC Code 6 digits)	Quantity (Kg)	The chemical/biological components in the waste and their concentrations are:		Physical form (gas liquid, solid, powder, sludge, or mixed)	Hazard codes(s)	Container type, number, and size.
			Component	Concentration (% or mg/kg)			
Contaminated Soil	1 7 0 5 0 3*	18,000Kg	Lead	1,300mg/kg	Solid	HP7,14	8W Tipper
			Zinc	400mg/kg			

The information given below is to be completed for each EWC identified

EWC Code	UN Identification Number(s)	Proper shipping name(s)	UN class(es)	Packing Groups	Special handling requirements

PART C Carriers Certificate

I certify that I today collected the consignment and that the details in A2, A4 and B3 are correct and I have been advised of any specific handling requirements

Where this note comprises part of a multiple collection the round number and collection number are:
 /

Carrier name: **LEE FALCETT**
 On behalf of (name, address, postcode, telephone, email, fax):
 DDE (SW) Ltd
 Dre Yard, Recycling Way,
 Smithaleigh, Plymouth, PL7 5FJ

Carrier registration number: **C B D U 1 2 4 2 6 1**
 Vehicle registration number: **NU71VHX**

Date: **05012023**

Signature: _____ Time: _____

PART D Consignor's certificate

I certify that the information in A, B and C above are correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements. I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1. Consignor name: **DAMIAN PEMBERTON**
 On behalf of (name, address, postcode, telephone, email, fax):
 Damien Pemberton - 01444 253333
 1 Beauchamp Road,
 Plymouth, PL2 3PZ

Signature: _____ Date: **05012023** Time: _____

PART E Consignee's Certificate

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation
170503	18000	A	R05 R05

1. I received this waste at the address given in A4 on: Date: **05012023** Time: **1349**

2. Vehicle Reg. **NU71 VHX**

Name: **ANDY JAGO**
 On behalf of (name, address, postcode, telephone, email, fax):
 UK Remediation Ltd
 Wheal Jane Old Mine Works
 Baldhu, Truro, Cornwall TR3 6EE
 Tel: 0117 924 4990

3. Where waste is rejected please provide details:

I certify that waste permit/exempt waste operation number:
EPR/XP3734QY
 authorises the management of the waste described in B at the address given in A4.

Where the consignment forms part of a multiple collection, as identified in Part C, I certify that the total number of consignments forming the collection are: _____

Signature: _____ Date: **05012023** Time: **1349**

DRE_WC1

APPENDIX 3

REVISED SITE-SPECIFIC CONCEPTUAL MODEL FOR HUMAN HEALTH

Potential Sources <i>(contaminant capable of causing harm)</i>	Potential Pathways <i>(route by which a contaminant can reach the receptor)</i>	Receptors <i>(something that could be adversely affected by the source)</i>	Potential for Pollutant Linkage with Unacceptable Risk	Proposed Control / Remediation Measures	Potential for Pollutant Linkage with Control / Remediation Measures in place
Made Ground with elevated Arsenic and Lead	Dermal contact, ingestion and inhalation of soil/dust Ingestion of site-grown produce and attached soil	Person living within the residential development. End user - critical receptor is a 0-6-year-old female child	✓ Soil sampling has identified potential risk from elevated arsenic and lead in site soils	✓ Placement of 'clean' soil capping layer with minimum thickness of 600mm over separation membrane.	✗ Provision of 'clean' soil capping layer will prevent contact between the end user and underlying contaminated soils.
	Leaching (vertical and horizontal – including along buried service trenches)	Controlled waters	✗ Contaminants present are considered not to pose a significant risk to controlled waters.	-	-
	Dermal contact, ingestion and inhalation of soil/dust	Construction worker during site development	✗ Minimal risk providing that appropriate health and safety procedures are followed	-	-

APPENDIX 4

APPENDIX 4 – PHOTOGRAPHIC RECORD



Plate 01: View showing membrane being laid over contaminated soils in garden area.



Plate 02: View showing membrane laid over driveway area.



Plate 03: View showing membrane laid over contaminated soils in garden area.



Plate 04: View showing membrane laid over rear patio area.



Plate 05: View showing aggregate hardcore | membrane in driveway area.



Plate 06: View showing garden area after capping placed .



Plate 07: View showing TP01 in garden area.



Plate 08: View showing 550mm capping thickness in TP0'



Plate 09: View showing separation membrane at b TP01.



Plate 10: View showing TP02 in garden area.



Plate 11: View showing 500mm capping thickness in TP0.



Plate 12: View showing separation membrane at b TP02.



Plate 13: View showing additional separation membrane placed in driveway area over hardcore.



Plate 14: View showing driveway preparation.



Plate 15: View showing completed driveway.



Plate 16: View showing aggregate hardcore capping soils in garden area.



Plate 17: View showing sand blinding laid over additional membrane in garden area in preparation for astroturf



Plate 18: View showing completed garden area with paving.



Plate 17: View showing completed garden area with paving.



Plate 18: View showing completed garden area with paving.

APPENDIX 5



Ben Spear
John Grimes Partnership Ltd
Leonards Road
Ivybridge
Devon

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01752690533

e: GROUP

t: [REDACTED]
f: [REDACTED]
e: [REDACTED]

Analytical Report Number : 23-69811

Project / Site name:	1 Beauchamp Road	Samples received on:	20/11/2023
Your job number:	18250	Samples instructed on/ Analysis started on:	20/11/2023
Your order number:	1164	Analysis completed by:	24/11/2023
Report Issue Number:	1	Report issued on:	24/11/2023
Samples Analysed:	1 soil sample		



Signed: _____

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-69811
 Project / Site name: 1 Beauchamp Road
 Your Order No: 1164

Lab Sample Number	2883634			
Sample Reference	TP01			
Sample Number	None Supplied			
Depth (m)	0.40			
Date Sampled	16/11/2023			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	65
Moisture Content	%	0.01	NONE	8.3
Total mass of sample received	kg	0.001	NONE	0.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MLO

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.3
Organic Matter (automated)	%	0.1	MCERTS	1.3

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	36
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35
Lead (aqua regia extractable)	mg/kg	1	MCERTS	51
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	54
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0

Analytical Report Number: 23-69811
 Project / Site name: 1 Beauchamp Road
 Your Order No: 1164

Lab Sample Number	2883634		
Sample Reference	TP01		
Sample Number	None Supplied		
Depth (m)	0.40		
Date Sampled	16/11/2023		
Time Taken	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.02	NONE	< 0.020
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.02	NONE	< 0.020
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.05	NONE	< 0.050
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	NONE	< 0.010
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	NONE	< 0.010
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.05	NONE	< 0.050
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



Analytical Report Number : 23-69811
 Project / Site name: 1 Beauchamp Road

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2883634	TP01	None Supplied	0.4	Light brown clay and sand with gravel and stones.

Analytical Report Number : 23-69811
 Project / Site name: 1 Beauchamp Road

Water matrix abbreviations:
 Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS

Analytical Report Number : 23-69811
 Project / Site name: 1 Beauchamp Road

Water matrix abbreviations:
 Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
 For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
 Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total