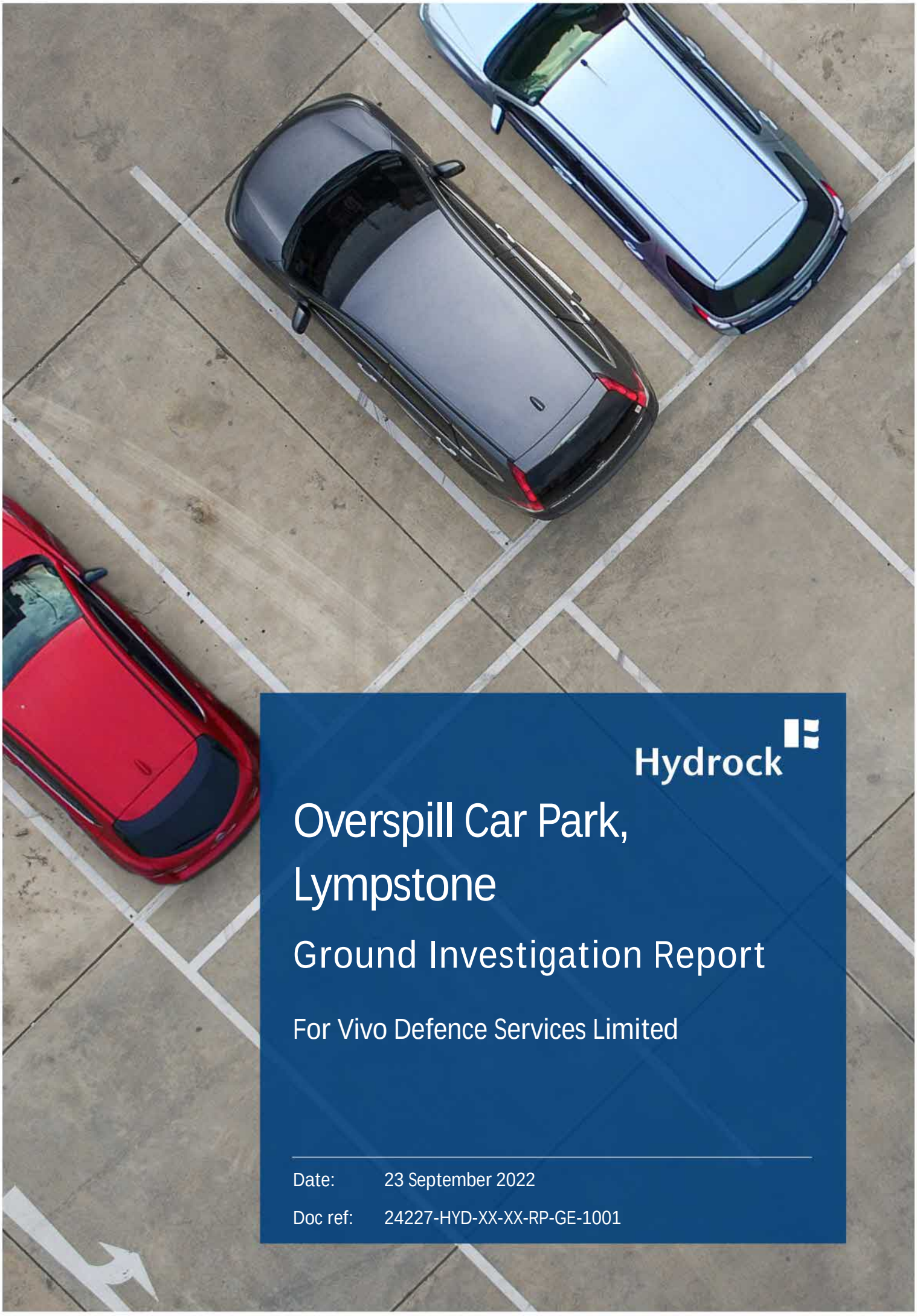

Hydrock

Overspill Car Park, Lympstone

Ground Investigation Report

For Vivo Defence Services Limited

Date: 23 September 2022

Doc ref: 24227-HYD-XX-XX-RP-GE-1001

DOCUMENT CONTROL SHEET

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Tables

Appendices

1. INTRODUCTION

1.1 Terms of reference

In July 2022, Hydrock Consultants Limited (Hydrock) was commissioned by Vivo Defence Services Limited (the Client) to a undertake ground investigation in the location of a proposed car park to inform the design of the project.

The site is located at land off an unnamed road, Lympstone, nearest postcode EX8 5AR, centred at approximate National Grid Reference (298982E 86151N) and comprises part of an undeveloped green field adjacent to an existing car-park and sports pitch. A Site Location Plan (Hydrock drawing ref. 24227-HYD-XX-XX-DR-GE-1000) is presented in Appendix A.

It is understood the development comprises a 100-space car park with a permeable surface to be used for occasional parking and access to the adjoining helicopter landing area.

The works were undertaken in line Hydrock's proposal (document ref. LYMP-HYD-XX-ZZ-CO-SP-0001-S2-P01 dated 31 May 2022) in response to receipt of the Design Brief Proposal (document ref 1246237) provided by the client. A copy of the design brief is presented in Appendix B.

1.2 Scope

The scope of the works comprised:

- machine-excavated trial pits to confirm the ground and groundwater conditions beneath the site;
- soakaway testing in accordance with BRE Digest 365, to provide infiltration rates for surface water drainage design;
- in-situ Transport Research Laboratory (TRL) Dynamic Cone Penetrometer (DCP) Testing to provide estimates of California Bearing Ratio (CBR) for pavement design;
- geotechnical classification testing to inform the composition of the near surface soils; and
- chemical (contamination) testing of Hydrock's minimum suite of determinants, to inform classification of soils for off-site disposal purposes.

1.3 Available information

The following document has been provided to Hydrock by Vivo Defence Services Limited for use in the preparation of this report:

- Vivo Design Brief Proposal 'Emergency/Over Spill Carpark', document ref. 1246237 dated 9 May 2022.

1.4 Regulatory context and guidance

The investigation work has been carried out in general compliance with recognised best practice, including (but not limited to) BS 5930:2015, BS 10175:2011+A2:2017 and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

2. SITE REFERENCING

2.1 Site referencing

Table 2.1: Site referencing information

Item	Brief Description
Site name	Overspill Car park, Lympstone.
Site address	Land off unnamed road, Lympstone, Devon, nearest postcode EX8 5AR.
Site location and grid reference	The site is located approximately 0.5km to the east of the Commando Training Centre Royal Marines (CTCRM) base in Lympstone, Devon. The National Grid Reference of the approximate centre of the site is 298982E 86151N.

A Site Location Plan (Hydrock drawing ref. 24227-HYD-XX-XX-DR-GE-1000) is presented in Appendix A.

2.2 Site description

A basic site description is presented in Table 2.2 below.

Table 2.2: Site referencing information

Item	Brief Description
Site access	The site was accessed from the western boundary via a gate off an existing car-park.
Elevation & topography	The site is rectangular in shape and generally level with an approximate area of 0.5 hectares (ha). Based on Ordnance Survey (OS) mapping the site lies at an elevation of approximately 33m Ordnance Datum (OD).
Present land use and boundaries	The site lies within a rural environment in the eastern extents of a large green field. The northern boundary of the site is bound by an existing carpark and sports pitch to the west and northwest and by an unnamed road to the south. Open fields lie beyond on all sides.
Vegetation	The site is laid to grass with mature hedgerow on the southern and eastern boundaries.
Underlying geology	Based on the British Geological Society (BGS) online geology viewer, the site is underlain by superficial River Terrace Deposits (sand and gravel) over mudstone of the Exmouth Mudstone and Sandstone Formation.

3. GROUND INVESTIGATION

3.1 Site works

The ground investigation works, including the rationale, is summarised in Table 3.1.

The fieldwork took place between 23 and 24 August 2022.

The ground investigation locations were surveyed in using a topographic survey-quality GPS and are shown on the Exploratory Hole Location Plan (Hydrock drawing ref. 24227-HYD-XX-XX-DR-GE-1001) in Appendix C.

The logs, including details of ground conditions and soil sampling, and trial pit photographs are also presented in Appendix C.

Table 3.1: Summary of site works

Activity	Method	No.	Name	Depth Range (m bgl)	Rationale
Pitting and Probing					
Trial pits	Machine dug (JCB 3X)	7	TP01 - 07	1.00 – 3.40	To determine shallow ground conditions. To enable sampling of soils. To facilitate in-situ soakaway testing (see below).
Probes	Handheld TRL-DCP*	7	TP01 - 07	0.465 - 0.797	Undertaken alongside each trial pit to provide a CBR** value for road/pavement design.
Other in situ testing					
Infiltration testing	BRE 365	5	TP01 - 05	-	To provide an infiltration rate for drainage design. TP01: positioned at the lowest point of the site to assess the feasibility for attenuation. TP02 – 05: positioned to assess the feasibility of a permeable car parking surface.
*Transport Research Laboratory Dynamic Cone Penetrometer (TRL-DCP) **California Bearing Ratio (CBR)					

3.2 Geo-environmental testing

3.2.1 Sampling strategy and protocols

Trial pit locations were positioned appropriately following internal consultation with a Hydrock Infrastructure Engineer.

Sampling of soils was undertaken to:

- allow basic characterisation of waste soils (either hazardous or non-hazardous) to inform disposal costs; and
- determine geotechnical characteristics.

Samples were taken, stored and transported in general accordance with BS 10175:2011+A2:2017.

3.2.2 Geo-environmental laboratory analyses

The chemical test certificates are provided in Appendix D.

Wherever possible, UKAS and MCERTS accredited procedures have been used.

The geo-environmental analyses undertaken on soils are summarised in Table 3.2.

Table 3.2: Geo-environmental analyses of soils

Determinand Suite	Natural Ground (River Terrace Deposits)
Hydrock minimum suite of determinands for solids*	5
*Hydrock minimum soil suite comprises: As, B (water soluble), Be, Cd, Cr (total), Cr (VI), Cu, Hg, Ni, Pb, S (elemental), Se, V, Zn, cyanide (total), sulfide, pH, asbestos fibres, speciated polynuclear aromatic hydrocarbons (PAH, by GC-FID), total phenols and fraction of organic carbon	

3.3 Geotechnical testing

3.3.1 Geotechnical laboratory testing

The geotechnical tests undertaken by Hydrock are summarised in Table 3.3 and the test certificates are provided in Appendix E. Wherever possible, UKAS accredited procedures have been used.

Table 3.3: Summary of sample numbers for geotechnical tests

Test	River Terrace Deposits	Exmouth Mudstone and Sandstone Formation (Clay/silt)	Exmouth Mudstone and Sandstone Formation (Sand)
Natural moisture content	3	2	-
Atterberg limits	3	2	-
Particle size distribution (sieve)	4	-	1

The geotechnical test data are summarised in Section 4.6 and interpreted in Section 5.

4. GROUND INVESTIGATION RECORDS AND DATA

4.1 Physical ground conditions

4.1.1 Summary of strata encountered

The following presents a summary of the properties of the ground and groundwater conditions encountered, based on field observations, interpretation of the field data and laboratory test results, taking into account excavation and sampling methods, transport, handling and specimen preparation.

Details of the Hydrock ground investigation works are provided in the logs in Appendix B and the individual strata are described in the sections below.

Table 4.1: Strata encountered

Stratum	Depth to top (m bgl)	Depth to base (m bgl)	Thickness (m) (range)
Topsoil	0.00	0.10 - 0.30	0.10 - 0.30
River Terrace Deposits	0.10 - 0.20	0.40 - 1.80	0.30 - 1.70
Exmouth Mudstone and Sandstone Formation	0.30 - 1.80	Unproven	Unproven

4.1.2 Topsoil

Topsoil was recorded at all locations from the surface to depths of between 0.10 metres below ground level (m bg) and 0.30m bgl.

The topsoil generally comprised light brown slightly gravelly sand with frequent rootlets.

For the purposes of this report, topsoil is defined as the upper layer of an in situ soil profile, usually darker in colour and more fertile than the layer below (subsoil), which is a product of natural chemical, physical, biological and environmental processes, but does not imply compliance with BS 3882:2015. Reuse of topsoil as a growing medium at the site should be determined by the landscape architect or the landscape Contractors.

4.1.3 River Terrace Deposits

River Terrace Deposits were recorded underlying the topsoil in all exploratory holes except for TP07.

The River Terrace Deposits were generally recorded as (reddish) brown silty/clayey gravelly sand and (reddish) brown sandy silty/clayey gravel.

The stratum was recorded to depths of between 0.40m and 1.80m bgl with a general thickness of between 0.30m and 0.80m except for in TP01 where a thickness of 1.7m was recorded (in the northwest of the site).

4.1.4 Exmouth Mudstone and Sandstone Formation

Residual strata of the Exmouth Mudstone and Sandstone Formation was encountered at all locations except for TP05 (which was completed within the River Terrace Deposits).

At times, the boundary between this strata and the overlying River Terrace Deposits was hard to discern; however, it was generally identified by observing the material as a very stiff reddish brown

slightly gravelly slightly sandy silt/clay or as a reddish brown (very gravelly) sand with a high silt/clay content.

The base of the Exmouth Mudstone and Sandstone Formation was not proven.

4.2 Obstructions

No obstructions were encountered during the works.

4.3 Visual and olfactory evidence of contamination (soil)

No visual or olfactory evidence of contamination was encountered during the works.

4.4 Groundwater

Groundwater was not encountered during the investigation.

4.5 Infiltration tests

The results of the infiltration testing undertaken are summarised in Table 4.2. The results sheets are presented in Appendix F.

Testing was carried out in general accordance with BRE Digest 365 (BRE DG 365, 2016).

Table 4.2: Infiltration test results

Stratum	Location	Depth to base of pit (m bgl)	Infiltration rate (m/s)		
			Run 1	Run 2	Run 3
River Terrace Deposits over residual Exmouth Mudstone and Sandstone Formation	TP01	2.50	No rates calculated due to poor infiltration.		
	TP02	1.00	No rates calculated due to poor infiltration.		
	TP03	1.00	No rates calculated due to poor infiltration.		
River Terrace Deposits	TP04	1.20	No rates calculated due to poor infiltration.		
River Terrace Deposits	TP05	1.00	No rates calculated due to poor infiltration.		

Due to poor infiltration characteristics of the natural ground only one test was undertaken at each location and in all cases the test was not completed, i.e. reached 75% of the effective test depth.

- At test location TP01 the water level dropped 430mm over a period of approximately 26 hours.
- At test location TP02 the water level dropped 340mm over a period of approximately 25 hours.
- At test location TP03 the water level dropped 240mm over a period of approximately 23 hours.
- At test location TP04 the water level dropped 220mm over a period of approximately 23 hours.
- At test location TP05 the water level dropped 80mm over a period of approximately 22 hours.

The infiltration data is discussed further in Section 5.

4.6 Geotechnical data

4.6.1 Introduction

Laboratory test results are contained in Appendix D.

The following sections summarise the main findings and provide interpretation where appropriate.

4.6.2 Plasticity

The volume change potentials in terms of BRE Digest 298 with respect to building near trees have been determined from the results of plasticity index tests on samples of soil. These are summarised in Table 4.3.

Table 4.3: Volume change potential

Stratum	No. of tests	Plasticity Index		Modified Plasticity Index		Plasticity designation	Volume Change Potential
		Min.	Max.	Min.	Max.		
River Terrace Deposits	3	14	25	8	14	Low to Intermediate	Negligible to low
Residual Exmouth Mudstone and Sandstone Formation	2	18	22	12	20	Low to Intermediate	Low

4.6.3 Particle size distribution

Particle Size Distribution test (PSDs) results are summarised in Table 4.4 and summary descriptions and PSD plots of the material analysed are presented in Appendix E.

Table 4.4: PSD results summary

Stratum	No. of tests	Silt/Clay %	Sand %	Gravel %	Coarse %	General description
River Terrace Deposits	4	14 - 40	21 - 43	20 - 56	0 - 9	-(Very) silty/clayey (very) gravelly sand; -Slightly gravelly sandy silty clay; and -Silty/clayey very sandy gravel with medium cobble content.
Residual Exmouth Mudstone and Sandstone Formation	1	46	32	22	0	Slightly gravelly sandy silty clay.

4.6.4 Subgrade stiffness

The subgrade stiffness (CBR) results are summarised in Table 4.5.

Table 4.5: CBR results and derived values

Stratum	No. tests	Method	CBR (%) (Range)
River Terrace Deposits	7	In-situ handheld TRL-DCP	3 - >100
Exmouth Mudstone and Sandstone Formation (TP03 and TP07 only)	1		22 - >100

In-situ CBR testing was undertaken from existing ground level adjacent to the trial pits.

All topsoil would require removal prior to construction of the car park. If the first reading from each test is removed from the assessment (considered to be representative of topsoil) then a CBR range of 14% - >100% has been recorded.

The near surface ground conditions comprised gravelly sand and sandy gravel; it is likely that 'refusal' of the TRL DCP apparatus was locally met on gravel/cobbles larger than the apparatus, and this may be responsible for some of the high CBR values recorded, where the apparatus drives gravel/cobbles through the ground ahead of the penetrometer, artificially increasing the ground's resistance.

It is also of note that the testing was undertaken during a period of drought, where the preceding months experienced unseasonably dry weather. This is likely to have led to higher recorded CBR values within the clay soils, then would be yielded in the wetter winter months.

5. GEOTECHNICAL ASSESSMENT

5.1 Volume Change Potential

Based on the test results, the River Terrace Deposits have been classified as negligible to low volume change potential; and the residual soils of the Exmouth Mudstone and Sandstone Formation have been classified as low volume change potential.

5.2 California Bearing Ratio

Based on the test results, the removal of topsoil, the formation level comprising River Terrace Deposits, and subject to in-situ testing during construction, it is considered likely an equilibrium CBR of 5% will be achievable over the majority of the site.

However, whilst significant level changes are unlikely to be proposed, should the formation level be the underlying clays of the Exmouth Mudstone and Sandstone Formation, for example in the centre of the site (TPs 03 & 07), where soils of the Exmouth Mudstone and Sandstone were encountered below the topsoil or a minimal thickness of River Terrace Deposits, a lower equilibrium CBR of 3% should be assumed, based on the plasticity of the clays.

Proof rolling of the formation level will be required and any loose or soft spots should be removed and replaced with an engineered fill, in accordance with a suitable Specification. The formation level will also need to be protected during inclement weather from deterioration; all slopes should be trimmed to falls to shed rain water and the surface sealed to limit infiltration.

Prior to the placement of the founding materials and the construction of the road pavement, the sub-formation and formation will need to be inspected and checked in accordance with a suitable specification to ensure the ground conditions are as expected. All testing should be carried out in accordance with DMRB IAN 73/06 to confirm that the ground conditions at time of construction are consistent with the previous design parameters.

If the CBR is found to be less than 2.5%, the sub-grade may be unsuitable for both the trafficking of site plant and as support for a permanent foundation, without improvement works being undertaken. Improvement works should be carried out in accordance with DMRB IAN 73/06 Rev 1 Chapter 5. In summary, consideration may be given to the following potential remedial techniques:

- excavation and re-engineering or replacement of weaker soils;
- the inclusion of geosynthetic reinforcement within the unbound layers of the capping and sub-grade;
- where cohesive soils are present and they are deemed suitable for treatment with hydraulic binders, to employ modification and/or stabilisation techniques on the formation; and
- where granular soils are present, de-watering and re-engineering the formation.

5.3 Drainage

Indicative infiltration rates for the ground investigation are presented in Appendix E and are summarised in Table 4.2.

Conventional soakaways and/or permeable paving are considered unsuitable for the site based on the low infiltration rates obtained during testing.

Consultation with a Drainage Engineer is recommended to determine an alternative strategy.

6. WASTE AND MATERIALS MANAGEMENT

6.1 Introduction

The Waste Framework Directive (WFD) (2009/98/EC) defines waste as 'any substance which the holder discards or intends to discard.' In a geo-environmental context, the waste is most often 'soil' and the two main scenarios are off-site disposal of the material as a waste and/or reuse of the material on site. For cost and sustainability reasons, reuse is preferred to off-site disposal.

Section 6.2 below describes the key issues relating to off-site disposal to landfill.

6.2 Waste disposal

6.2.1 Principles

Based on the WFD, any material excavated on site may be classified as waste and it is the responsibility of the producer of a material to determine whether or not it is waste. Where off-site disposal is undertaken, the following guidance applies.

Classification is a staged process:

- A hazardous waste is defined under the WFD as one which possesses one or more of fifteen defined hazardous properties. If a waste is not defined as hazardous, then it is non-hazardous.
- Where the materials are soil, it is then be assigned using the 'List of Waste Codes', which classifies the material as either:
  - » hazardous (17-05-03), which is defined as "soil and stones containing hazardous substances"; or
  - » non-hazardous (17-05-04), which is defined as "soil and stones other than those mentioned in 17-05-03".
  - » Hydrock utilise the proprietary assessment tool, HazWasteOnline™ to undertake this assessment.
- Waste Acceptance Criteria (WAC) testing is then undertaken if required, and are only applicable following classification of the waste, and only where the waste is destined for disposal to landfill. The WAC are both qualitative and quantitative. The WAC and the associated laboratory analyses (leaching tests) are not suitable for use in the determination of whether a waste is hazardous or non-hazardous.

It should be noted that some non-hazardous wastes may be suitable for disposal at an inert landfill as non-hazardous waste, subject to meeting the appropriate waste acceptance criteria.

It should be noted that classification must be undertaken on the waste produced, by the waste producer. Necessary sampling frequency to adequately characterise a soil population is defined within WM3.

Further discussion with regards to the characterisation process for different scenarios and waste types is provided below.

Topsoil and Peat

Topsoil and peat are biodegradable, therefore if they are surplus to requirements and cannot be re-used in accordance with a Materials Management Plan, they cannot be classified as inert. As such, topsoil and peat need to be classified by a staged assessment and sampling process and would either be classified as hazardous or non-hazardous, depending upon the results of the assessment.

Greenfield Sites

Waste from completely greenfield sites may be accepted at a landfill as inert waste if it meets the requirements of paragraph 10 (wastes acceptable without testing at landfills for inert waste) of the Landfill (England and Wales) (Amendment) Regulations (2005) ('the Regulations') can be met. Paragraph 10 of the Regulations states, "soils may be able to be classified as inert waste without testing, if:

- they are single stream waste of a single waste type;
- there is no suspicion of contamination and they do not contain other material or substances such as metals, asbestos, plastics, chemicals, etc....."

As such, where the site is greenfield and the waste producer is confident about the quality of a soil (i.e. naturally occurring and uncontaminated), further sampling and laboratory testing is not necessary for the Basic Characterisation and this can be undertaken on qualitative Waste Acceptance Criteria testing.

In this instance the waste producer can characterise the waste based on visual assessment and written description of the waste in addition to supporting evidence such as a desk study assessment of the greenfield status. However, it should be noted this characterisation is subject to agreement by the landfill operator who may require testing to be undertaken to confirm classification.

Contaminated or potentially contaminated sites

If the site is brownfield, contaminated or potentially contaminated, the waste must undergo an initial waste classification exercise using background information on the source and origin of the waste and assessment of chemical test data in accordance with Environment Agency Technical Guidance WM3.

If following the initial waste classification exercise, the soils are acceptable for disposal to a non-hazardous landfill, further qualitative Waste Acceptance Criteria (WAC) testing is not required.

However, if soils are potentially able to be disposed to an inert landfill as non-hazardous waste, or require testing to determine if they can be disposed of to a stable non-reactive hazardous or hazardous class of landfill, the next stage of assessment is to undertake qualitative WAC testing. This will determine the Basic Characterisation and the landfill category at which the soils can be accepted.

Hazardous material must be subjected to WAC testing to determine whether it requires treatment before it can be accepted at the hazardous landfill, while non-hazardous material can be tested to determine whether it may be suitable for placement in an inert landfill.

6.2.2 HazWasteOnline™ assessment

As the site is greenfield, HazWasteOnline™ assessment is not technically required. However, it has been undertaken for completeness during the site investigation. The output of the HazWasteOnline™ assessment is provided in Appendix G.

Based on the output of the HazWasteOnline™ assessment, the natural soils have been classified as non-hazardous waste.

If disposal is required, and subject to confirmation via Waste Assessment Criteria (WAC) testing, it is considered likely the soils will be suitable for disposal at an inert waste tip.

6.2.3 General waste comments

It should be noted that:

- It is the waste producer's responsibility to segregate the waste at source and waste producers must not mix waste materials/streams or dilute hazardous components, for example by mixing with less or non-hazardous waste on site to meet WAC limit values.
- The above preliminary assessment has been made on the basis of the soils tested as part of the ground investigation, using the HazWasteOnline™ assessment. However, the formal classification of waste can only be undertaken on the material to be disposed of, and by the waste producer and the receiving landfill as license conditions vary from landfill to landfill.
- Basic Characterisation should be undertaken in accordance with Environment Agency guidance by the waste producer. Hydrock can assist if required and this report will assist the characterisation. However, Basic Characterisation does not form part of the current commission and would require further assessment and testing on the wastes actually to be disposed.
- Once the waste producer has undertaken an initial Basic Characterisation on each waste stream, they can manage the soils as part of the on-site processing programme (for example, stockpiling, treatment, screening and separation). The waste producer and landfill operator will then need to agree the suite of compliance testing for regularly generated waste to demonstrate compliance with the initial Basic Characterisation prior to disposal.
- At the time of disposal, additional testing on the excavated soils to be disposed of, will likely be necessary.
- Non-hazardous and hazardous soils require pre-treatment (separation, sorting and screening) prior to disposal.
- The costs for disposal of non-hazardous and hazardous soils are significant compared to disposal of inert material.
- In addition to disposal costs, landfill tax will be applicable. Non-hazardous and hazardous waste will generally be subject to the Standard Rate Landfill Tax. Inert or inactive waste will generally be subject to the Lower Rate Landfill Tax. The landfill tax value changes each April and can be found at https://www.gov.uk/government/publications/rates-and-allowances-landfill-tax/landfill-tax-rates-from-1-april-2013.

- Before a waste producer can move waste to a landfill site for disposal, they need to check the landfill site has the appropriate permit and must have completed the following[1]:
  - » Duty of care transfer note / Hazardous Waste consignment note, including comment as to if pre-treatment has been undertaken; and
  - » Basic Characterisation of the waste, to include: description of the waste; waste code (using list of wastes); composition of the waste (by testing, if necessary) and; WAC testing (if required).

[1] ENVIRONMENT AGENCY. November 2010. Guidance on waste acceptance procedures and criteria. Waste acceptance at landfills. The Environment Agency.

7. GENERAL COMMENTS

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of Vivo Defence Services Limited (the Client), under the terms of appointment for Hydrock, for the sole and specific use of the Client and parties commissioned by them to undertake work where reliance is placed on this report. Any third parties who use the information contained herein do so at their own risk. Hydrock shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared or for use of the report by any parties not defined in Hydrock's appointment.

This report details the findings of work carried out in August 2022. The report has been prepared by Hydrock on the basis of available information obtained during the study period. Although every reasonable effort has been made to gather all relevant information, not all potential environmental constraints or liabilities associated with the site may have been revealed.

Hydrock has used reasonable skill, care and diligence in the design of the investigation of the site and in its interpretation of the information obtained. The inherent variation of ground conditions allows only definition of the actual conditions at the locations and depths of trial pits and boreholes at the time of the investigation. At intermediate locations, conditions can only be inferred.

Groundwater data are only representative of the dates on which they were obtained and both levels and quality may vary.

Unless otherwise stated, the recommendations in this report assume that ground levels will remain as existing. If there is to be any re-profiling (e.g. to create development platforms or for flood alleviation) then the recommendations may not apply.

Information provided by third parties has been used in good faith and is taken at face value; however, Hydrock cannot guarantee its accuracy or completeness.

The work has been carried out in general accordance with recognised best practice. Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance. Where the phrase 'suitable for use' is used in this report, it is in keeping with the terminology used in planning control and does not imply any specific warranty or guarantee offered by Hydrock.

Please note that notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds, this report does not constitute a formal survey of these potential constraints and specialist advice should be sought.

Any site boundary line depicted on plans does not imply legal ownership of land.

8. REFERENCES

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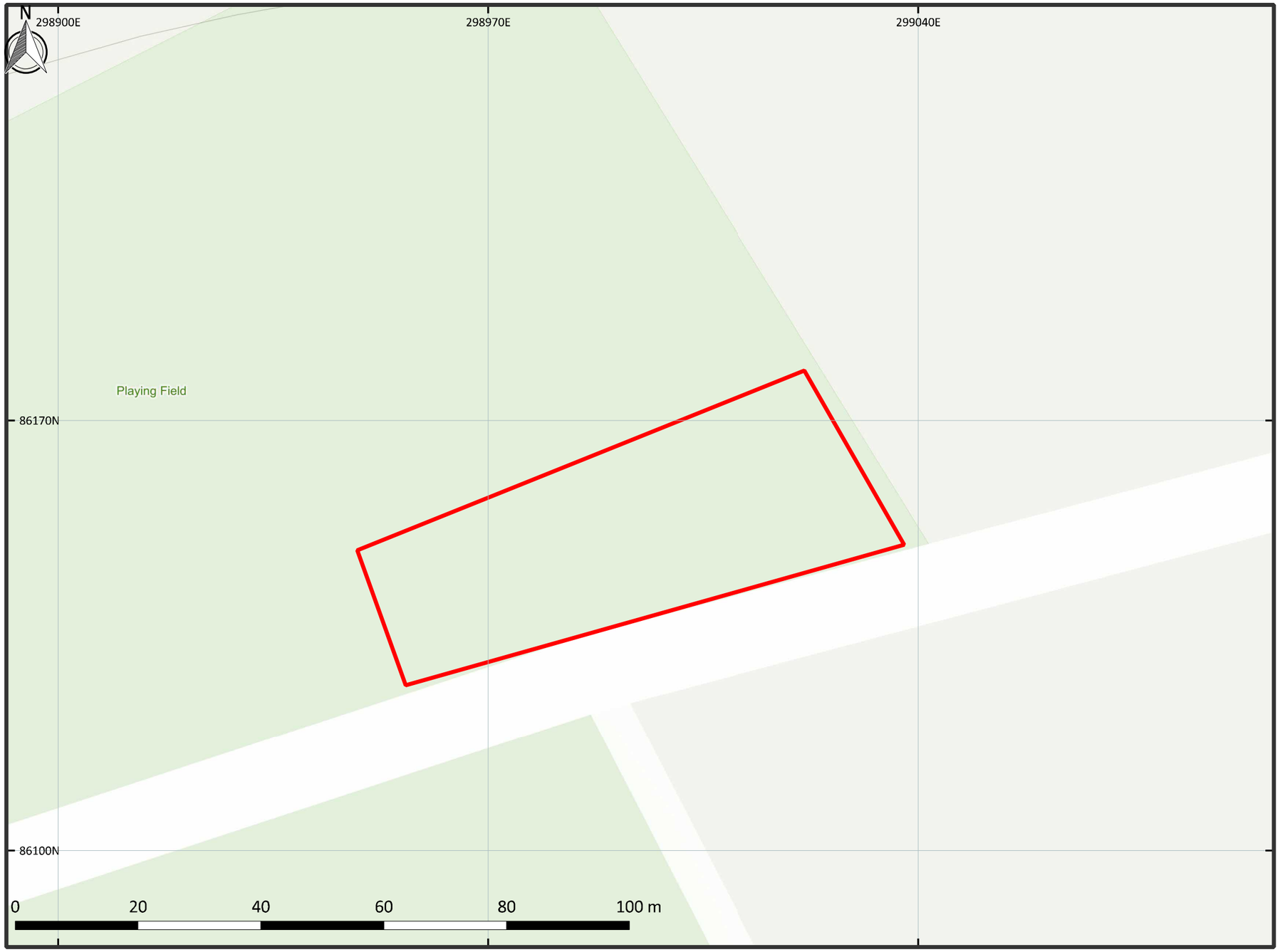
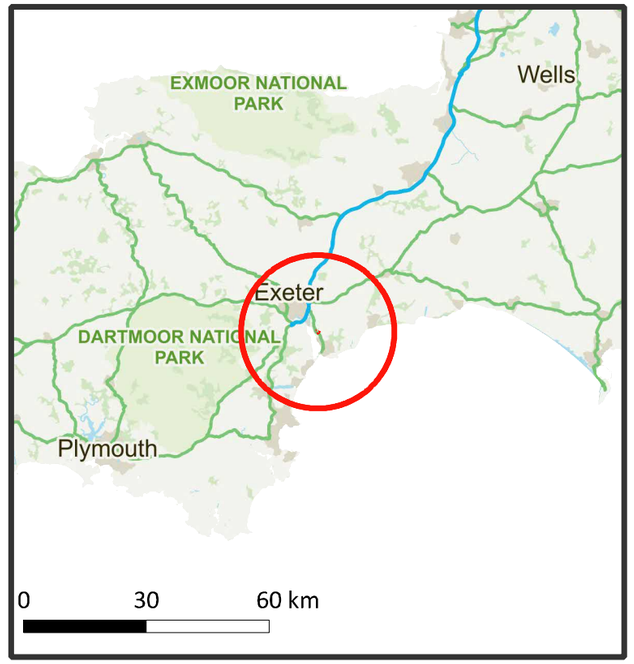
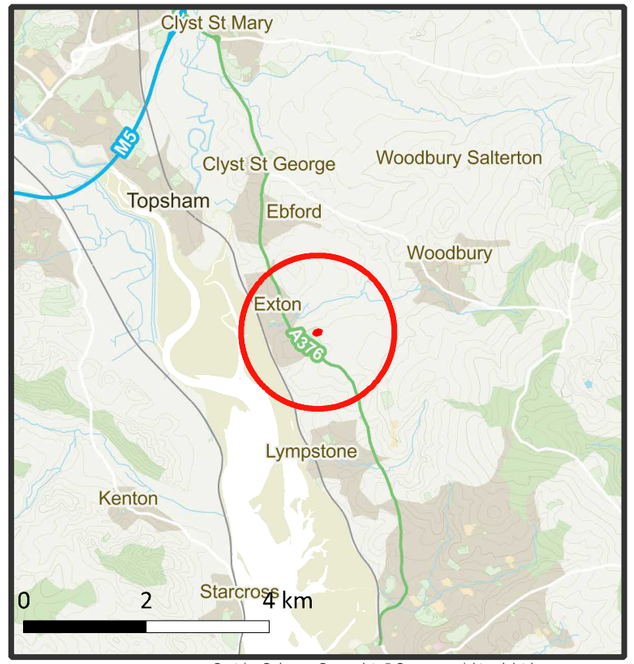
Appendix A Drawings







KEY PLAN

Site Boundary

NOTES

1. Contains OS data © Crown copyright and database right (2022)

REVISIONS

REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	RP	XX	13/09/22	First issue

Hydrock

TITLE
SITE LOCATION PLAN

HYDROCK PROJECT NO.
C-24227-C

SCALE @ A3
1:710.812468

CLIENT
VIVO DEFENCE

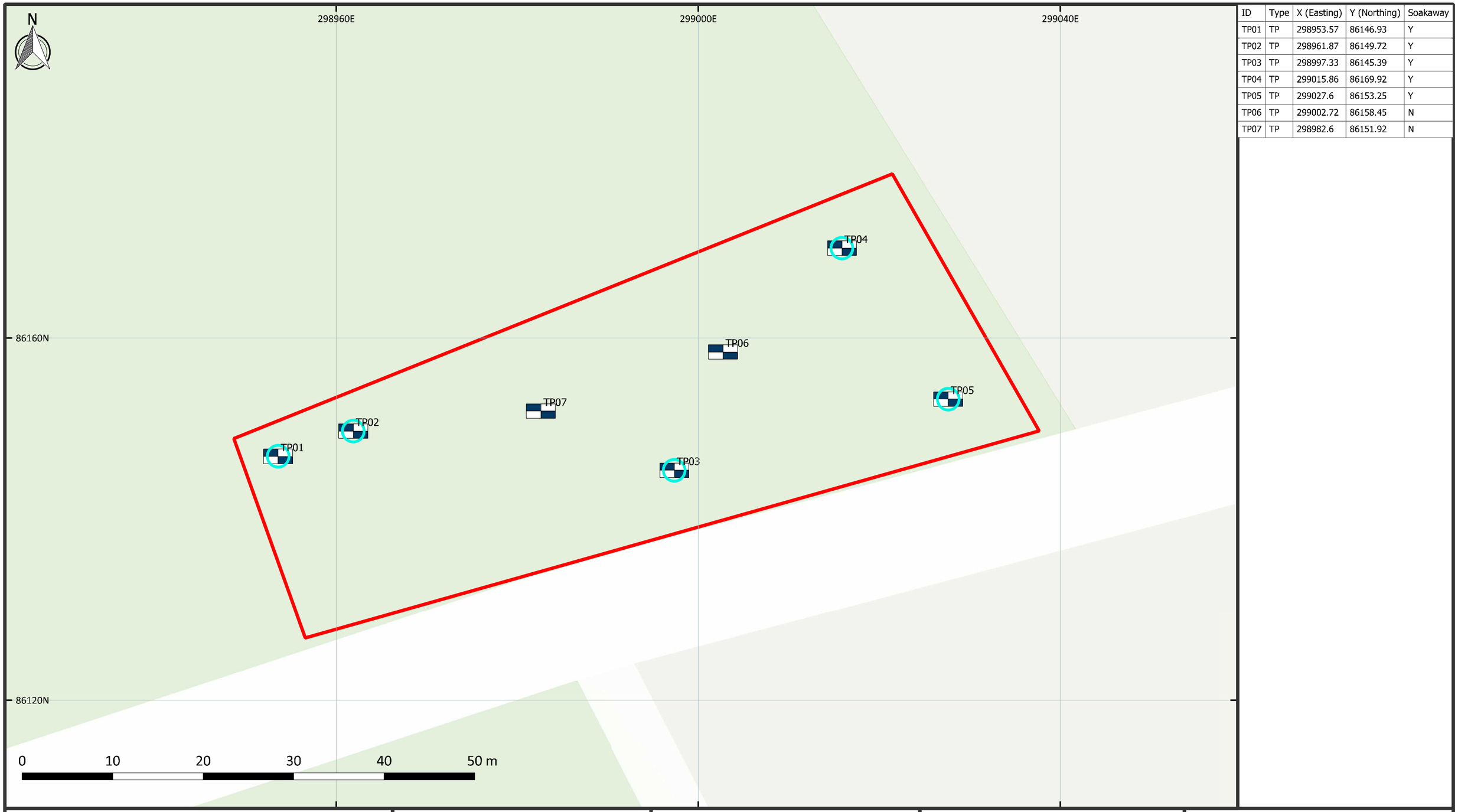
PURPOSE OF ISSUE
SUITABLE FOR INFORMATION

STATUS
S2

PROJECT
LYMPSTONE OVERSPILL CAR PARK

DRAWING NO.
24227-HYD-XX-XX-DR-GE-1000

REVISION
P01



ID	Type	X (Easting)	Y (Northing)	Soakaway
TP01	TP	298953.57	86146.93	Y
TP02	TP	298961.87	86149.72	Y
TP03	TP	298997.33	86145.39	Y
TP04	TP	299015.86	86169.92	Y
TP05	TP	299027.6	86153.25	Y
TP06	TP	299002.72	86158.45	N
TP07	TP	298982.6	86151.92	N

KEY PLAN

Site Boundary

Proposed Loca0ons

Trial Pit

Soakaw ay

NOTES

1. Contains OS data © Crown copyright and database right (2022).
2. The posi0ons of exploratory holes were taped from exis0ng features on site and are thefore approximate.

REVISIONS

REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	RP	XX	13/09/202:	First issue

Hydrock

TITLE: EXPLORATORY HOLE LOCATION PLAN

HYDROCK PROJECT NO.: C-24227-C

SCALE @ A3: 1:400.00016

CLIENT: VIVO DEFENCE

PURPOSE OF ISSUE: SUITABLE FOR INFORMATION

STATUS: S2

PROJECT: LYMPSTONE OVERSPILL CAR PARK

DRAWING NO.: 24227-HYD-XX-XX-DR-GE-1001

REVISION: P01

Appendix B Design Brief Proposal

Design Brief Proposal

IMS Task Reference	1246237
Project Title	Emergency/Over spill Carpark
Establishment	Lympstone
Location of Works	North Over spill car park
Author	Barnaby Phillips
Issue Date	09.05.22
Revision Number	01

1 BACKGROUND TO THE REQUIREMENT

This project will provide sufficient, adequate and safe parking for military personnel, civilian staff & visitors to CTCRM. CTCRM does not have sufficient parking for personnel on courses or for other permanent and occasional users at the site, including frequent and regular Passing Out parades and families days. A field which is the unit's primary Helicopter Landing Space (HLS) is used as occasional overspill and provides some mitigation, but rapidly deteriorates in wet conditions with the potential requirement to recover stranded vehicles. Rutting also presents a H&S concern for those exiting/accessing their cars and requires rectification prior to use as an HLS.

2 DESCRIPTION OF WORKS

2.1 Details of the Task - Project Works

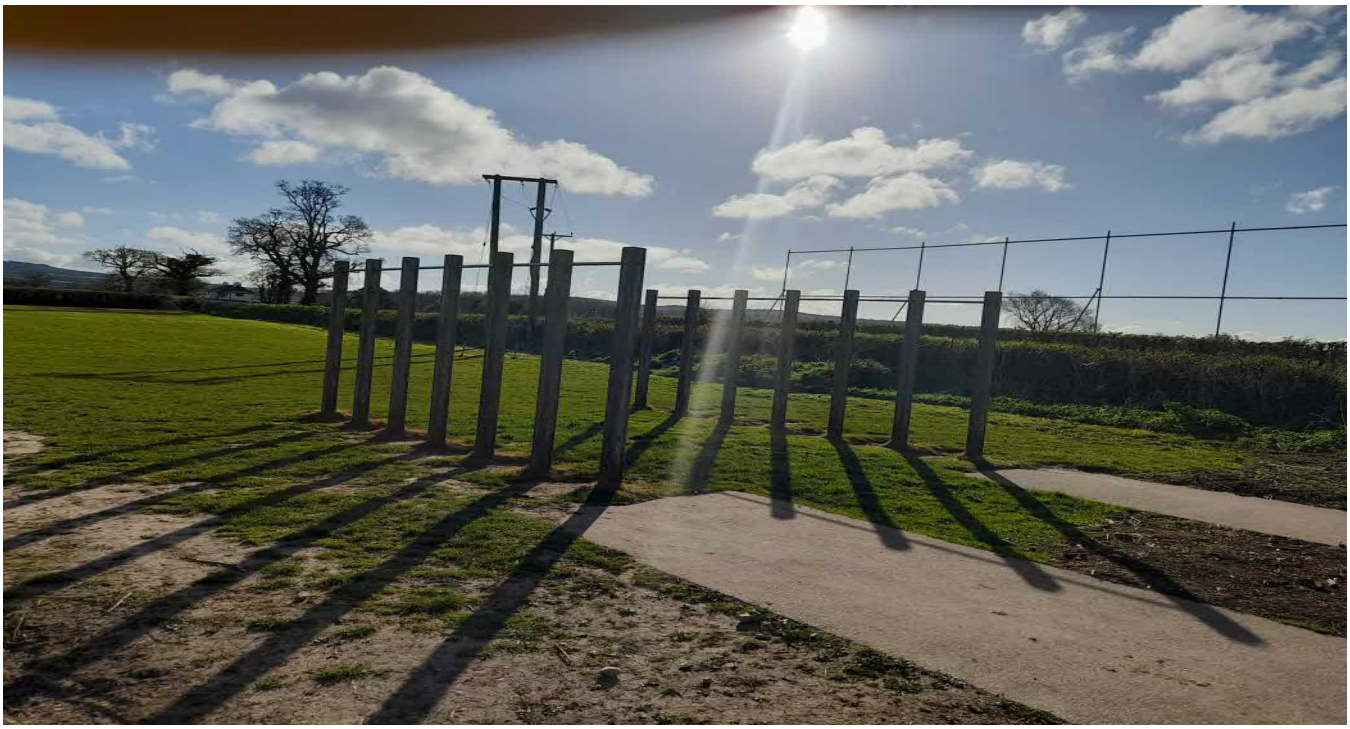
The project is to provide a fully functional facility to the satisfaction of Defence Infrastructure (DIO) Infra Structure Manager (IM) and VIVO Project Manager (PM). Any materials selected must be sufficiently robust for use within the military estate.

The proposal is to install a suitable ground surface for occasional car parking and access. Access to the adjoining Helicopter Landing space is to be provided for emergency vehicles and for ongoing grounds maintenance.

The area is approx 100x25m2 with the target of 2x rows of 50 car spaces The material is to be permeable and hard wearing such as a parking grid type product suitable for grass. The ground is to be suitably prepared with the removal of top soil and inclusion of a suitable substrate, backfilled and seeded according to manufactures recommendation

Existing Entrance. Container to be removed by others. Suitable access to the proposed parking area to be provided. Existing Gate and fencing to remain

Exercise bars to be removed by contractor- handed back to end user.



Proposed site of Emergency/over spill parking

2.2 Design Consultant Services

Undertake all design and surveys to produce a detailed design, equivalent to RIBA Stage 3, with the addition of dimensioned layout and typical construction detail drawings, as well as a full NBS Specifications and a Schedule of Works.

The design must be fully coordinated and integrated with all elements of the works and design disciplines. The design should be sufficiently detailed to enable a robust and like for like tenders to be obtained.

Design Stage

Develop the requirements of this project to produce the design package, to include but not limited the following:

- Undertake relevant surveys to gain baseline information to produce the design and mitigate risks during the construction stage of the project.
- Attend design review meetings with VIVO, DIO, End Users and other Stakeholders, to obtain agreement to the design prior to tender of the construction works
- Liaise with and obtain approvals from Stakeholders, including statutory authorities, Ancala, DSA DFSR, VIVO APs and others as necessary to gain agreement to the design prior to issue of final tender package
- Liaise with and obtain Building Regulation approval, if required, including payment of all associated Fees and Charges, following the MOD Building Regulations Compliance System
- Liaise with and obtain Planning Permission approval, if required, including payment of all associated Fees and Charges

- Production of Pre-Tender Estimate
- A summary of potential outstanding risk items which may have a cost implication during the construction stage

Surveys:

- Topographical survey
- Geotechnical Survey, to determine if there are any contaminants in the ground, ground bearing capacity testing to establish depth of sub-base required for the car park surfacing material and testing to establish any requirements for drainage. The Consultant will include for the excavation of any trial holes, bores or other method making good of all trial holes, and returning disturbed surfaces back to original condition
- Utility surveys and scanning surveys to establish locations of existing underground services
- Ecological Surveys
- Any other surveys required in addition to those listed above should be included and identified in the quotation return

Meetings:

- The designer will be expected to allow for attending the following meetings on site including all travel and associated costs.
    - Requirements meeting
    - Design/Client review meetings
    - Industry day during tender period

<u>Building Information Modelling</u>

The design documents shall be produced in line with BIM Level 2 process and appropriate technologies, in accordance with British Standard 1192 suite of documents, including BS1192-4:2014 (COBie – Code of Practice); in line with UK Government's Construction Strategy (GCS) 2011-15 and the GCS 2016-20.

The Consultant shall ensure that all information and data on these systems is maintained in accordance with security classification of the Level 2 Asset and in accordance with Asset specific Built Asset Security Information Requirements (BASIR).

Tender Documentation

On completion of the design provide 1No paper file copy and 1 No electronic version of the tender package to include but not limited to the following:

- Specification in NBS format
- Schedule of Works in NRM format
- Tender drawings
- Surveys and reports produced
- Existing site information obtained
- Building Regulation approval
- Planning Permission approval
- Stakeholder/Statutory Authority approvals
- Designers Risk Assessment ie Hazard checklist/elimination & risk reduction schedule
- Any other relevant information to be included in the tender

Tender Process

- VIVO will issue the tender documentation and manage the tender stage.
- The tenders will be on a fixed price basis based on VIVO Works Subcontract, under a design and build single stage selective tender process issued to a minimum of three contractors.
- The Consultant shall assist VIVO during the tender process by responding to queries raised by Contractors during the tender period and allow to attend an Industry Day.
- The Consultant shall assist with the technical compliance of the tender review.

2.2.1 CDM 2015

VIVO will be the Principal Contractor and Principal Designer. The Consultant is to undertake the Designer duty only, but is to liaise with the VIVO PM, throughout the development of the design, with reference to regulations 9 and 10 – Duties of Designers.

> **"***Regulations 9 and 10 set out the duties placed on designers. These include the duty to eliminate, reduce or control foreseeable health and safety risks through the design process, such as those that may arise during construction work or in maintaining and using the building once it is built."*

2.2.2 Time Constraints

The tender package to be submitted to VIVIO for Client/End User approval within 10 weeks of receipt of purchase order, to enable construction works to be complete before 31/03/23.

2.3 MoD or VIVO Supplied Information

A SoKH's (Statement of Known Hazards) will be available from the establishment if required for ground surveys. 20 days notice will be required.

2.4 Constraints and concurrent activities

It is proposed that these works be completed during normal working hours and whilst the establishment continues to deliver its core requirements The site is fully operational and ongoing maintenance activities will need to be taken into account.

2.5 GOSC and AP Authorisation

Ensure that GOSC and AP authorization has been approved for any works which require electrical power outages which may impact on data and comms systems. Please note that this is a pre-agreed 20 working day notice with all stakeholders. All M&E operatives must have successfully completed the VIVO skill persons assessments and been appointed by the VIVO Authorised Person.

2.6 Environmental and Sustainability

The Consultant should consider the environmental and sustainability aspect during the design phase and make considerations relating to the procurement of materials and to the future maintenance costs. All designs should operate within the ethos contained with VIVO's Sustainability and Environmental policies, as well as those of the MOD.

2.7 Statutory Requirements / Industry Standards

The project works are to be designed to meet all applicable mandatory and statutory regulations including but not limited to the following:

- Design and Maintenance Guides
- MOD/DIO Technical Bulletins
- MOD/DIO JSP's or SRPs
- Other relevant MOD publications, guidance and standards
- Relevant British Standards
- Relevant Building Control Regulations

3 Health & safety

3.1 Risk Assessments and Method Statements

Survey works will not be allowed to start on site unless the Risk Assessments and Method Statement have been approved and the VIVO Method Statement Review sheet has been signed and issued to the Consultant. VIVO request that RA's and MS's are issued at least 1 week before the planned start date to ensure that these can be reviewed and approved in time to commence the works without compromising the safety of the works.

3.2 Operative Qualification and Appointment

Prior to commencement of any works the Consultant must provide training details and relevant qualifications of any operative who is proposed to undertake mechanical, electrical or gas works on any VIVO managed sites. All electrical operatives must have successfully completed the VIVO skill persons assessments and been appointed by the VIVO Authorised Person.

3.3 Mandatory PPE 5 Items

For this project there are 5 mandatory items of PPE which must be worn at all times whilst at work, these are:

- Protective Footwear
- Head Protection
- High Visibility Clothing
- Hand Protection
- Eye Protection

3.4 Welfare Facilities

The site have made available the welfare facilities within VIVO offices for hot and cold running water and WC facilities. Food is available to purchase on site.

3.5 Housekeeping & Signage

Adequate and meaningful signage is to be displayed at all times.

3.6 Plant & Machinery

The Consultant is to provide the necessary copies of licenses, CSCS Cards, Certification of operatives who will be utilising any plant or machinery on site. The Consultant will supply copies of plant records to the Project Manager. No plant or machinery is to be operated in a dangerous manner, any slow-moving equipment is required to have a banksman for reversing purposes and tacking around site. No plant or machinery is to block access and egress roads, building exits or fire routes.

3.7 Temporary Works Approval

The Consultant is to submit the necessary documentation/design for approval for any temporary works that may be required during the survey works. They are also to allow 2 weeks for approval of Temporary Works by VIVO. TW permits will be issued by the VIVO TW Co-Ordinator.

3.8 Barriers and Protection

Physical barriers must be used wherever the risk assessments identifies that the area of works requires protective barriers. The use of marker tape as a barrier is now strictly forbidden on all VIVO works.

Any road protection, traffic signals and closure signage to be in place and suitably detailed on a Traffic Management Plan to be forwarded and agreed with the VIVO PM prior to commencement on site.

All working areas without exception are to be secured by use of 1800mm high HERAS or equivalent fencing, erected and maintained in accordance with the VIVO standard HERAS fencing design. Once erected, VIVO are to be requested to issue Temporary Works Permit.

3.9 Permits to Works

Permits to work for hot works, excavations and roof works will be issued by the VIVO OM/PM. Permits for higher risk works such as hazardous areas, LV/HV, confined spaces and WaH will be issued by the VIVO AP. See annex 1 for more details.

4 SECURITY

Access to the MOD Establishment will require 24 hours notice to the VIVO Project Manager.

All persons/operatives working on this project will be expected to receive a site induction prior to commencement on site.

All persons/operatives must possess a VIVO ID card which details the BPSS security clearance. Without this card no work can be carried out on site, any person/operative found working on site with this card will be requested to leave site immediately.

Upon commencement on site a signing in/out book will be provided and persons/operatives are expected to follow the local site rules in accordance with the 4C's and CDM Regulations 2015.

Lone working – Consultants must provide risk assessments for any persons/operatives that could be lone working

Tools, materials and plant must be securely locked up at the end of the working day and must also be used by competent engineers only.

Annex 1: Other Requirements:

During the quote stage the Consultant must include for all costs associated with all the following:

Failure to ensure items are understood will be at the Consultants risk.

1) VIVO and or its client departments reserve the right to refuse access to site to any person without explanation.

2) Any costs associated with obtaining security clearance for the Consultants personnel or sub-contractor's, or in connection with obtaining access to the site in accordance with Site / Establishment rules, Regulations or Standing Orders shall be borne by the Consultant and shall be deemed to be included in the price.

2a) All personnel employed on the works are to obtain VIVO Identification (VD ID). A minimum of five days prior to commencement of works, each individual is to complete the relevant VIVO Forms and present, in person, to a VIVO Verifier along with the supporting documentation listed on the form.

2b) All Foreign Nationals will be required to submit completed forms to their individual contract Vetting team and to complete the full United Kingdom Security Vetting (UKSV) online portal to apply for CTC/SC clearance before access onto military establishments will be permitted.

3) All works are to be carried out in strict accordance with Crown Fire Standards, Standard Fire Precautions for Contractors Engaged on Crown Works and JSP375 – MOD Health and Safety Handbook

4) Regular Toolbox Talks are to be undertaken throughout the course of the works relating to targeted Health and Safety matters – VIVO will issue the Toolbox Talk document to the Site supervisor who is expected to deliver the toolbox talk to the workforce and record individual's attendance on the VIVO standard Toolbox talk register

5) The Sub-contractor is to comply with the Workplace (Health, Safety and Welfare) Regulations 1992 and subsequent amendments. Facilities including toilets, suitable supply of potable water for drinking purposes, hot and cold running water and space for operatives to take a break are available for use at the VIVO office for the duration of the works.

6) All personnel, including supervisors, operatives, sub-contractors, and deliveries are to be pre-announced a minimum of 24hours in advance of their attendance to the Main Entrance Guardroom along with vehicle make, model and registration details.

7) All personnel requiring access onto the Establishment must arrive bearing a recognised form of Photographic identification (i.e. British Drivers License including photo, British passport, or the like).

8) All personnel are to restrict their movements on site to the access route agreed between the main gate, VIVO offices, welfare and the site compound. At no times are operatives to travel onto active airfield pavements

9) Along with VIVO staff, the Consultants designers or other members of the team are to engage with Key stakeholders in a positive and cooperative manner.

10) A Dilapidation survey is to be undertaken prior to commencement and the record of findings including photographic evidence provided to VIVO. This document will be referred to in respect of any dispute at Project Handover.

11) Any activity or materials required for the protection of Client property during the course of the works are deemed to be included within the price and must be costed by the Consultant.

12) On receipt of written instruction to proceed or Task/Purchase Order, the Consultant is to develop and present a Programme of Works to include periods for mobilisation, surveys and sequence of works. Once the Programme is agreed, it shall be adhered to throughout the course of the works unless amendment is requested to VIVO in writing and written acknowledgement is provided.

13) Where applicable, the Sub-contractor is to include within the scope, suitable and sufficient time between phases of work to enable Customer to undertake any approvals necessary to allow further progress of the works.

14) At time of the quotation, the Consultant is to develop a Risk Register identifying any issues that may affect time, cost or quality of the works, the register is to include the financial and time implications of the risk materialising. Format of the Risk Register is to be agreed with the VIVO Project Manager.

15) At the time of the quotation, the Consultant is to submit a Milestone Schedule identifying significant stages at which interim payment may be requested and the value of each milestone. The Milestone schedule is to be reviewed by VIVO at time of award and any amendments agreed prior to commencement. Where the duration of the works is expected to be of short duration, no interim payment will be considered.

16) VIVO are appointed Principal Designer and Principal Contractor in respect of CDM Regulations. However, as the Consultant will deliver the whole of the works, it is anticipated that all matters related to CDM Regulations will be developed and actioned by the Consultant and communicated to VIVO for approval.

17) The Consultant, prior to commencement, are to liaise with VIVO for the development and completion of Sustainability Appraisal in the VIVO Format provided.

18) A programme of meetings will be developed at time of commencement including Pre-commencement Meeting and regular Progress Meetings (as appropriate to the duration and complexity of the works). The Consultant is to ensure that they are represented at each meeting and that Progress reports are provided to VIVO a minimum of 2 days ahead of the meeting.

19) Where the Consultant is aware of any issues which may delay the satisfactory progression of the service, they are to immediately notify the VIVO Project Manager in writing along with any proposed mitigation measures to reduce the delay.

20) All Communications in relation to the Project are to be directed, in the first instance to the VIVO Project Manager. No instruction by other parties (with the exception of immediate Health and Safety issues or which involve Military Security/Police) are to be entertained. Where instruction is attempted by individuals not directly employed by VIVO, they are to be immediately notified to the VIVO Project Manager

21) Lympstone is not an active airfield however is subject to use by fixed wing and rotary winged aircraft from time to time, hence strict control must be applied to any loose material which may impact on Flight Safety (FOD). All loose materials are to be contained at point of use; any waste material is to be immediately placed within a covered skip. Skip lid or cover is to be kept firmly closed at all times.

22) All personnel employed on the works (including Consultant sub-contractors and visitors) are to receive Site induction by VIVO staff immediately on arrival on their first attendance. The Consultant is to allow for sufficient time for personnel to attend Induction and all personnel are to complete the Induction Register.

23) Works on electrical, mechanical & petroleum installations, by any contractor/operative, comes under the requirements of the safe system of work JSP 375, volume 3, and the persons carrying out that work must be registered as Skilled Persons (SKP) for the site, and have been issued with appropriate safety documentation, generally a 'Permit to Work' (PTW) or 'Standing Instruction' (SI), to cover the work being done, be it Electrical, Mechanical or Petroleum.

The Consultant is to ensure that all relevant sub-sub-contractors / operatives are appointed as Skilled Persons & have a Permit to Work/Standing Instruction for the equipment & sites they will working on – This will involve issuing all the appropriate documentation for review by the Authorised Person (AP) iaw JSP 375 and attending a meeting with aforementioned AP for assurance on their level of skills and competency.

24) Any works involving excavations must not proceed without the Consultant / sub-contractor being in possession of a permit to dig and a valid Statement of Known Hazards as issued by 4C's. A minimum of five working days' notice is required.

25) If required all staff are to attend First Aid Fire training by Station Fire Section. There is no cost for this training, however the Consultant is to include the cost of personnel attending.

26) Any works involving spark or heat producing equipment or tasks that are likely to initiate combustion are to be subject to issue of Hot Works Permit by VIVO staff and Station 4Cs via Station Fire Section. Permits will only be issued on a daily basis and 'Hot Works' are to cease a minimum of 2 hours before cessation of the days' work for Fire watch to take place. If Hot Works are required the Consultant is to include the submission of Fire Prevention Plan for approval.

27) The Sub-contractor is to agree suitable routes to/from site, and suitable locations for any plant or equipment required for survey works.

28) Working Hours – All works are to undertaken within the hours of 08:00 – 16:30hrs, Monday to Friday. No works will be permitted outside of these times without the express written permission of VIVO. Exception to this is referred to in Clause 2.4 below

29) The taking of photographs is strictly forbidden except where required for the correct recording of dilapidations and progress of the works. All requirements for the taking of photographs must be agreed through the Station Security Officer, via VIVO and may not include any military personnel, equipment, or vehicles

30) On MOD establishments requiring unescorted visitors and delivery team members to have clearances higher than BPSS, such as SC clearance, the Consultant is to ensure that sufficient numbers of SC cleared team members are made available to carry out escorting duties at all times. It should not be assumed that VIVO staff will be made available to carry out escorting duties unless specific arrangements have been agreed on an individual project basis.

31) Compatibility of materials – The Consultant is to ensure that all materials selected for incorporation into the works are fully compatible by confirmation with the respective manufacturers.

32) The Consultant is to adhere to the requirements defined within VIVO procedures *Contractor Requirements' and Health and Safety Requirements'.*

33) All works in respect of crane and external MEWP activity are subject to notification to NATS and Air Traffic Control. The Consultant is to provide a minimum of 5 days' notice, advising location, maximum height, dates, start and finish times. Cranes are to be fitted with continuous red beacon at the highest point. The Consultants attention is also drawn to VIVO *Health and Safety Requirements* in respect of 'Temporary Works'.

34) The role of Temporary Works Supervisor, is to be provided by the Consultant, either by the designated Supervisor/Manager, sub-contractor, or suitably competent individual who will be on site at all times that works are progressing.

35) The use of steps and ladders on this project will not be permitted without written request from the Consultant detailing why safer forms of working at height equipment cannot be used (ie. MEWP, Mobile tower, guarded podium etc).

Appendix C Exploratory Hole Location Plan & Exploratory Hole Logs

Site Investigation Photograph 1	
Date: 23-08-2022	
Direction Photograph Taken: East.	
Description: TP01.	

Site Investigation Photograph 2	
Date: 23-08-2022	
Direction Photograph Taken: East.	
Description: TP01 – pit view.	

Site Investigation Photograph 3	
Date: 23-08-2022	
Direction Photograph Taken: n/a.	
Description: TP01 – arisings.	

Site Investigation Photograph 4	
Date: 23-08-2022	
Direction Photograph Taken: East.	
Description: TP02.	

Site Investigation Photograph 5	
Date: 23-08-2022	
Direction Photograph Taken: East.	
Description: TP02 – pit view.	

Site Investigation Photograph 6	
Date: 23-08-2022	
Direction Photograph Taken: n/a.	
Description: TP02 – arisings.	

Site Investigation Photograph 7	
Date: 23-08-2022	
Direction Photograph Taken: East.	
Description: TP03.	

Site Investigation Photograph 8	
Date: 23-08-2022	
Direction Photograph Taken: East.	
Description: TP03 – pit view.	

Site Investigation Photograph 9	
Date: 23-08-2022	
Direction Photograph Taken: n/a.	
Description: TP03 – arisings.	

Site Investigation Photograph 10	
Date: 23-08-2022	
Direction Photograph Taken: North.	
Description: TP04.	

Site Investigation Photograph 11	
Date: 23-08-2022	
Direction Photograph Taken: North.	
Description: TP04 – pit view.	

Site Investigation Photograph 12	
Date: 23-08-2022	
Direction Photograph Taken: n/a.	
Description: TP04 – arisings.	

Site Investigation Photograph 13	
Date: 23-08-2022	
Direction Photograph Taken: North.	
Description: TP05.	

Site Investigation Photograph 14	
Date: 23-08-2022	
Direction Photograph Taken: North.	
Description: TP05 – pit view.	

Site Investigation Photograph 15	
Date: 23-08-2022	
Direction Photograph Taken: n/a.	
Description: TP05 – arisings.	

Site Investigation Photograph 16	
Date: 24-08-2022	
Direction Photograph Taken: North.	
Description: TP06.	

Site Investigation Photograph 17	
Date: 23-08-2022	
Direction Photograph Taken: n/a.	
Description: TP06 – pit view.	

Site Investigation Photograph 18	
Date: 24-06-2022	
Direction Photograph Taken: n/a.	
Description: TP06 – arisings.	

Site Investigation Photograph 19	
Date: 24-08-2022	
Direction Photograph Taken: n/a.	
Description: TP07.	

Site Investigation Photograph 20	
Date: 24-08-2022	
Direction Photograph Taken: n/a.	
Description: TP07 – pit view.	

Site Investigation Photograph 21	
Date: 24-08-2022	
Direction Photograph Taken: n/a.	
Description: TP07 – arisings.	

Site Investigation Photograph 22	
Date: 24-08-2022	
Direction Photograph Taken: West.	
Description: TP01 – backfilled.	

Site Investigation Photograph 23	
Date: 24-08-2022	
Direction Photograph Taken: West.	
Description: TP02 – backfilled.	

Site Investigation Photograph 24	
Date: 24-08-2022	
Direction Photograph Taken: East.	
Description: TP03 – backfilled.	

Site Investigation Photograph 25	
Date: 24-08-2022	
Direction Photograph Taken: n/a.	
Description: TP04 – backfilled.	

Site Investigation Photograph 26	
Date: 24-08-2022	
Direction Photograph Taken: South.	
Description: TP05 – arisings.	

Site Investigation Photograph 27	
Date: 24-08-2022	
Direction Photograph Taken: n/a.	
Description: TP06 – backfilled.	

Site Investigation Photograph 28	
Date: 24-08-2022	
Direction Photograph Taken: North.	
Description: TP07 – Backfilled.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grass over light brown slightly gravelly SAND with frequent rootlets. Gravel is angular to rounded fine to coarse chert. (TOPSOIL)	0.10	(0.10)		
				Reddish brown very sandy GRAVEL. Gravel is angular to round fine to coarse chert and weak sandstone. (RIVER TERRACE DEPOSITS)		(1.10)		
				... Below 1.10m, Occasional lenses of firm clay. Low cobble content of rounded chert.	1.20			
				Reddish brown very gravelly SAND. Gravel is angular to rounded fine to coarse chert. (RIVER TERRACE DEPOSITS)		(0.60)		
				Reddish brown gravelly very silty/clayey SAND. Gravel is angular to rounded fine to coarse chert. (RESIDUAL EXMOUTH MUDSTONE AND SANDSTONE FORMATION)	1.80	(0.40)		
				Reddish brown slightly silty/clayey SAND. (RESIDUAL EXMOUTH MUDSTONE AND SANDSTONE FORMATION)	2.20	(0.30)		
				Base of Excavation at 2.50m	2.50			

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grass over light brown slightly gravelly SAND with frequent rootlets. Gravel is angular to rounded fine to coarse chert. (TOPSOIL)	0.20	(0.20)		
				Reddish brown gravelly SAND. Gravel is sub-rounded to rounded fine to coarse chert. (RIVER TERRACE DEPOSITS)	0.40	(0.20)		
				Reddish brown sandy silty/clayey GRAVEL. Gravel is angular to rounded fine to coarse chert. (RIVER TERRACE DEPOSITS)	0.80	(0.40)		
				Very stiff reddish brown slightly sandy slightly gravelly SILT/CLAY. Gravel is sub-rounded to rounded fine to coarse chert. (RESIDUAL EXMOUTH MUDSTONE AND SANDSTONE FORMATION)	1.00	(0.20)		
				... At 1.00m, Material too stiff for hand shear vane test. Base of Excavation at 1.00m				

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grass over light brown slightly gravelly SAND with frequent rootlets. Gravel is angular to rounded fine to coarse chert. (TOPSOIL)	0.10	(0.10)		
				Light brown sandy silty/clayey GRAVEL. Gravel is sub-rounded to rounded fine to coarse chert. (RIVER TERRACE DEPOSITS)	0.40	(0.30)		
				Very stiff reddish brown slightly gravelly sandy SILT/CLAY. Gravel is sub-rounded to rounded fine to coarse chert. (RESIDUAL EXMOUTH MUDSTONE AND SANDSTONE FORMATION)		(0.60)		
				Base of Excavation at 1.00m	1.00			

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grass over light brown slightly gravelly SAND with frequent rootlets. Gravel is angular to rounded fine to coarse chert. (TOPSOIL)	0.20	(0.20)		
				Light brown very gravelly slightly silty/clayey SAND. Gravel is rounded fine to coarse chert. (RIVER TERRACE DEPOSITS)	0.50	(0.30)		
				Reddish brown silty/clayey SAND & GRAVEL with a low cobble content and frequent bands of soft to stiff sandy gravelly silt/clay. Gravel is sub-rounded to rounded fine to coarse chert. Cobbles are rounded chert. (RIVER TERRACE DEPOSITS)	1.20	(0.70)		
				Base of Excavation at 1.20m				

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grass over light brown slightly gravelly SAND with frequent rootlets. Gravel is sub-rounded to rounded fine to coarse chert. (TOPSOIL)		(0.20)		
					0.20			
				Reddish brown very sandy silty/clayey GRAVEL with a low cobble content and occasional lenses of very stiff gravelly clay. Gravel is sub-rounded to rounded chert and weak sandstone. Cobbles are rounded chert. (RIVER TERRACE DEPOSITS)		(0.80)		
					1.00			
				Base of Excavation at 1.00m	1			
					2			
					3			
					4			
					5			

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grass over gravelly silty/clayey SAND with frequent rootlets. (TOPSOIL)	0.20	(0.20)		
				Brownish red very gravelly silty/clayey SAND with frequent lenses of very stiff sandy gravelly silt/clay. Gravel is sub-rounded to rounded fine to coarse chert. (RIVER TERRACE DEPOSITS)	0.40	(0.20)		
				Reddish brown very silty/clayey SAND & GRAVEL with frequent bands of very stiff sandy gravelly silty/clay. Gravel is angular to rounded fine to coarse chert. (RIVER TERRACE DEPOSITS)	0.80	(0.40)		
				Very stiff red sandy gravelly SILT/CLAY. Gravel is sub-rounded to rounded fine to coarse chert. (RESIDUAL EXMOUTH MUDSTONE AND SANDSTONE FORMATION) *... Below 1.20m, Locally soft to firm.*	1.40	(0.60)		
				Reddish brown slightly gravelly silty/clayey SAND interbedded with firm sandy SILT/CLAY. Gravel is sub-rounded to rounded fine to coarse chert. (RESIDUAL EXMOUTH MUDSTONE AND SANDSTONE FORMATION) *... At 1.50m, Hand shear vane on arisings.*	2.80	(1.40)		
				Base of Excavation at 2.80m				

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grass over light brown slightly gravelly SAND with frequent rootlets. Gravel is sub-rounded to rounded fine to coarse chert. (TOPSOIL)		(0.30)		
					0.30			
				Reddish brown very silty very gravelly SAND with frequent lenses of very stiff sandy silt/clay. Gravel is angular to rounded fine to coarse chert. (RESIDUAL EXMOUTH MUDSTONE AND SANDSTONE FORMATION) *... Below 0.50m, Low cobble content. Silt/clay lenses are firm to stiff.*				
				... Below 1.50m, Gravelly.		(3.10)		
					3.40			
				Base of Excavation at 3.40m				

Appendix D Geoenvironmental Test Results

Gareth Chugg
Hydrock Consultants Ltd
Lobb Shippon
Plympton
Plymouth
PL7 5BP

t: 01752 347515
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e: Group Plymouth engineers group

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 22-80586

Project / Site name:	Lympstone Car Park	**Samples received on:**	26/08/2022
Your job number:	C 24227 C	**Samples instructed on/ Analysis started on:**	26/08/2022
Your order number:	PO19782	**Analysis completed by:**	05/09/2022
Report Issue Number:	1	**Report issued on:**	06/09/2022
Samples Analysed:	5 soil samples		

Signed: [redacted]

Adam Fenwick
Technical Reviewer
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

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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: 22-80586
Project / Site name: Lympstone Car Park

Lab Sample Number				2404427	2404428	2404429	2404430	2404431
Sample Reference				TP02	TP03	TP04	TP05	TP07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.50	0.10	0.30	1.00
Date Sampled				23/08/2022	23/08/2022	23/08/2022	23/08/2022	23/08/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)								
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	7.1	9.4	3.6	7.8
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8	0.8	0.8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	SZS	SZS	SZS	SZS	SZS

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	7.9	6.6	7.6	7.4
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0097	0.0027	0.0071	0.0035	0.0077
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.033	0.0023	0.026	0.0048	0.0019

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Speciated PAHs

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

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 22-80586
Project / Site name: Lympstone Car Park

Lab Sample Number				2404427	2404428	2404429	2404430	2404431
Sample Reference				TP02	TP03	TP04	TP05	TP07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.50	0.10	0.30	1.00
Date Sampled				23/08/2022	23/08/2022	23/08/2022	23/08/2022	23/08/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)								
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.9	9	7	9.3	12
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.31	0.46	0.31	0.46	0.7
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	< 0.2	0.4	0.4	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (III)	mg/kg	1	NONE	14	20	13	20	24
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	20	13	20	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10	14	9.4	12	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	16	21	16	24
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.4	13	8.2	11	18
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	18	29	17	28	33
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	33	31	30	31	55

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-80586
Project / Site name: Lympstone Car Park

* 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 *
2404427	TP02	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2404428	TP03	None Supplied	0.5	Light brown clay and sand with gravel.
2404429	TP04	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2404430	TP05	None Supplied	0.3	Brown loam and sand with gravel and vegetation.
2404431	TP07	None Supplied	1	Light brown clay and sand with gravel.

Analytical Report Number : 22-80586
Project / Site name: Lympstone Car Park

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
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
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
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
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.	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
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	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' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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.

Appendix E Geotechnical Test Results

Test Report

South West Geotechnical Ltd
Unit 3 Brooklands,
Howden Road,
Tiverton,
Devon
EX16 5HW

Job No:	14492	Date Received:	01/09/22
Job Name:	Lympstone	Date Sent:	20/09/22
Client Name:	Hydrock (Plymouth)	Transmittal Number:	T7892
Client Job No:	24227	Senders Initials:	DT
Client Address	Lobb Shippon, Plympton, Devon PL7 5BP	Report Revision No.	1
		Sampled by SWG lab staff?	NO

Ref.	Test Detail	No. of Tests / Report No.
A1	BS EN ISO 17892-1: 2014 - Water Content - UKAS Accredited	5
A5	BS EN ISO 17892-12: 2018 - Atterberg Limits - UKAS Accredited	5
A9	BS EN ISO 17892-4:2016: Clause 5.2 Sieving method - Determination of Particle Size Distribution - UKAS Accredited	5

Sampling not performed by South West Geotechnical laboratory staff. Results apply to the samples as received.

Approved Signatories:

David Trowbridge (Laboratory Manager)

Matt Stokes (Senior Technician)

8260
Accredited to
ISO/IEC
17025:2017

Summary of Classification Test Results

Unit 3 Brooklands,
Howden Road,
Tiverton,
Devon
EX16 5HW

Project No.	Project Name
14492	Lympstone
Client Job No.	**Client**
24227	Hydrock Plymouth

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Hole No.	Sample				Soil Description	*wc*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Type	Top	Base	Ref		%	%	%	%	%	Mg/m3	
TP02	B	1.00			Orangish brown slightly gravelly slightly sandy CLAY	12.1	89 - Sieved	36	14	22	-	
TP03	B	0.50			Orangish brown slightly gravelly slightly sandy CLAY	9.3	65 - Sieved	31	13	18	-	
TP04	B	1.20			Orangish brown slightly gravelly slightly sandy CLAY	6.8	58 - Sieved	27	13	14	-	
TP05	B	0.30			Brown very clayey very sandy GRAVEL	5.6	39 - Sieved	40	15	25	-	
TP06	B	0.60			Orangish brown slightly gravelly slightly sandy CLAY	10.8	71 - Sieved	35	15	20	-	
						-	-	-	-	-	-	
						-	-	-	-	-	-	
						-	-	-	-	-	-	
						-	-	-	-	-	-	
						-	-	-	-	-	-	

Preparation in accordance with BS1377-1:2016 where applicable. Atterberg 4 point preparation in accordance with BS EN ISO 17892-12:2018

Key

Atterberg Limits
4pt - BS EN ISO 17892-12:2018
(30° cone and increasing water contents) unless :

1pt - BS1377-2:1990 (CL.4.4)

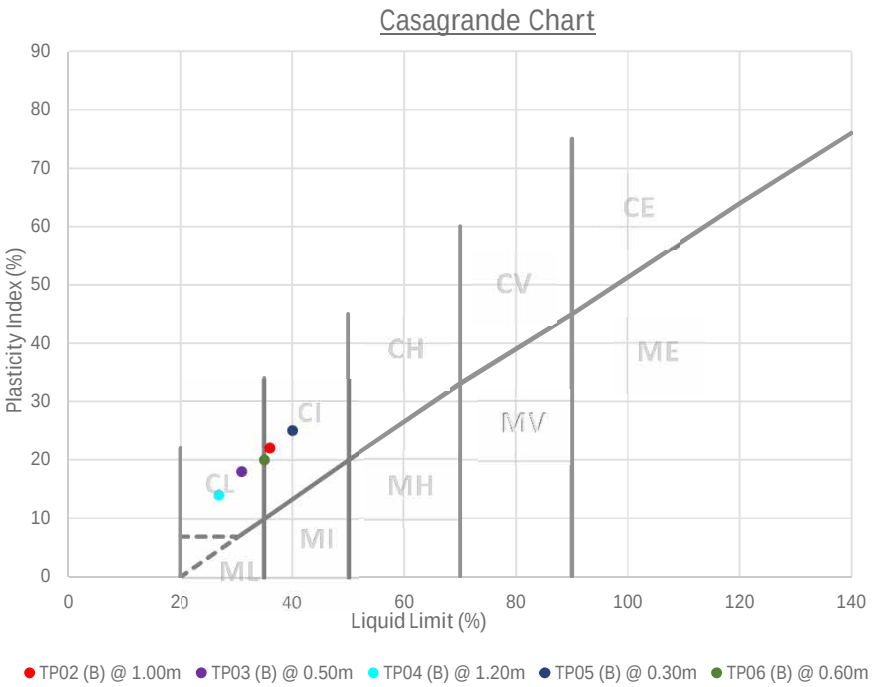
Water Content (wc) % BS EN ISO 17892-1:2014
Particle density BS1377-2:1990
sp - small pyknometer CL.8.3
gj - gas jar CL.8.2

Date	Approved By	Page No.	1
20/09/2022	Matt Stokes - Senior Technician	KL001R Index Summary	

Graphical Summary of Atterberg Test Results

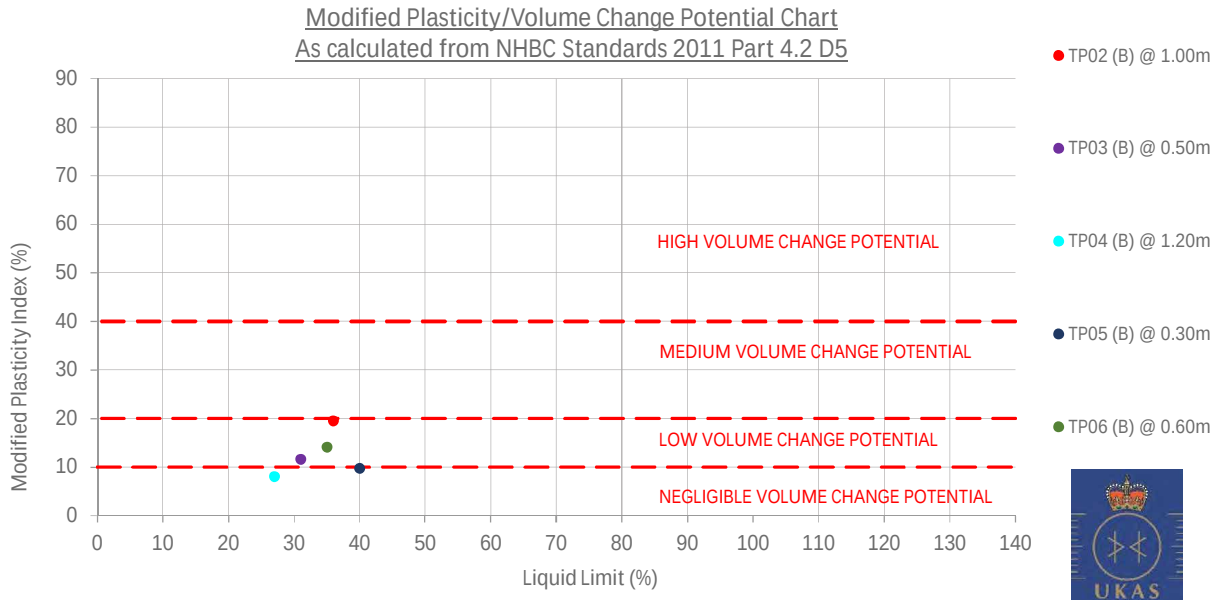
Unit 3 Brooklands,
Howden Road,
Tiverton,
Devon
EX16 5HW

Project No.	Project Name
14492	Lympstone
Client Job No.	**Client**
24227	Hydrock Plymouth



Sample ID	Plasticity Index (%)	Modified Plasticity Index (%)
TP02 (B) @ 1.00m	22	20
TP03 (B) @ 0.50m	18	12
TP04 (B) @ 1.20m	14	8
TP05 (B) @ 0.30m	25	10
TP06 (B) @ 0.60m	20	14
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

The Modified Plasticity Index (I'p) is defined as the Plasticity Index (Ip) of the soil multiplied by the percentage of particles less than 425µm.
ie. I'p x % less than 425um/100%



KL001a Index Graphical Summary	Approved By	Date
	David Trowbridge - Laboratory Manager	20/09/2022 15:27

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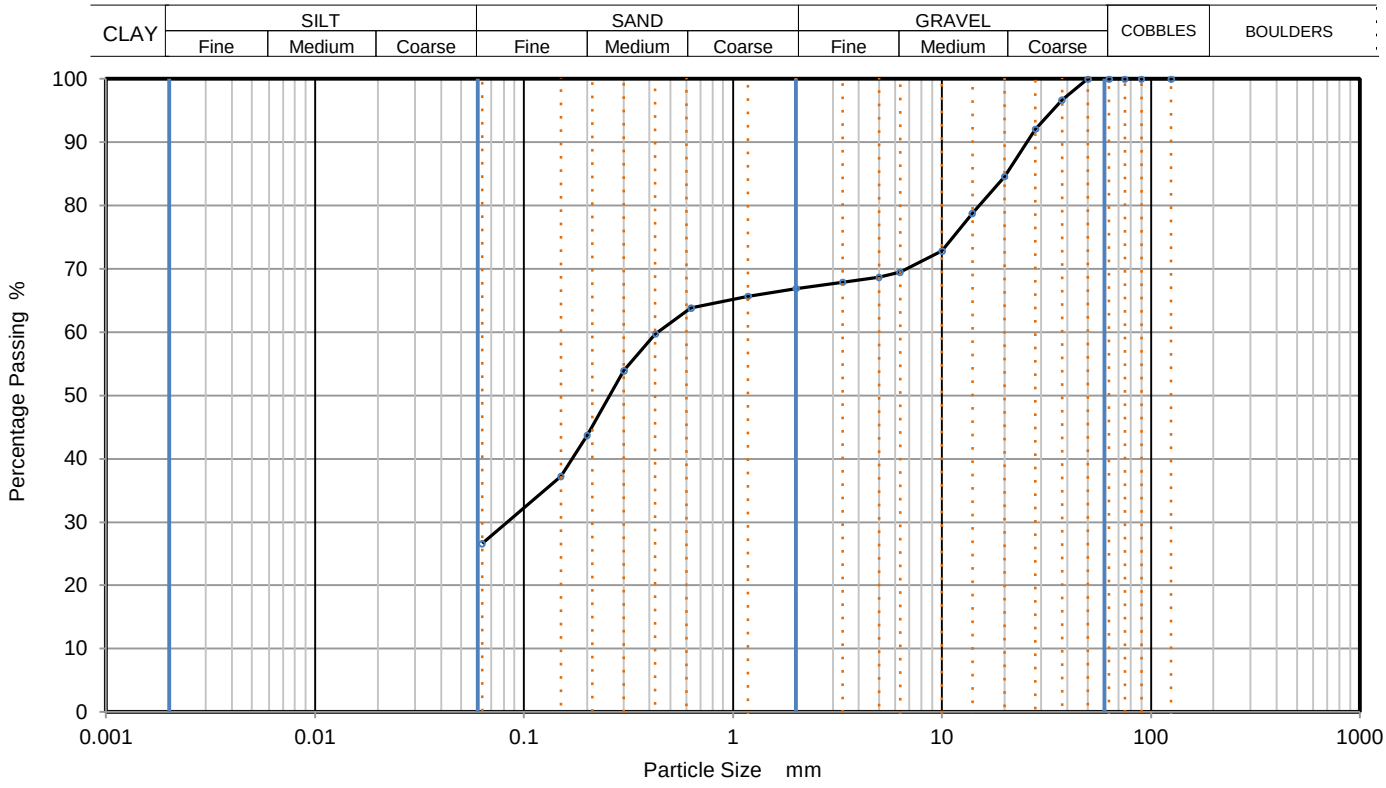
PARTICLE SIZE DISTRIBUTION

				Project No.	14492
				Borehole/Pit No.	TP01
Project Name	Lympstone			Sample No.	
Soil Description	Orangish brown very silty/clayey very gravelly SAND			Depth, m	0.30
Specimen Reference	2	Specimen Depth	m	Sample Type	B
Test Method	BS EN ISO 17892-4: 2016, clause 5.2				



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	97		
28	92		
20	85		
14	79		
10	73		
6.3	70		
5	69		
3.35	68		
2	67		
1.18	66		
0.63	64		
0.425	60		
0.3	54		
0.2	44		
0.15	37		
0.063	27		

Dry Mass of sample, g	12909

Sample Proportions	% dry mass
Very coarse	0
Gravel	33
Sand	40
Fines <0.063mm	27

Grading Analysis		
D100	mm	
D60	mm	0.436
D30	mm	0.0833
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with BS EN ISO 17892-4: 2016

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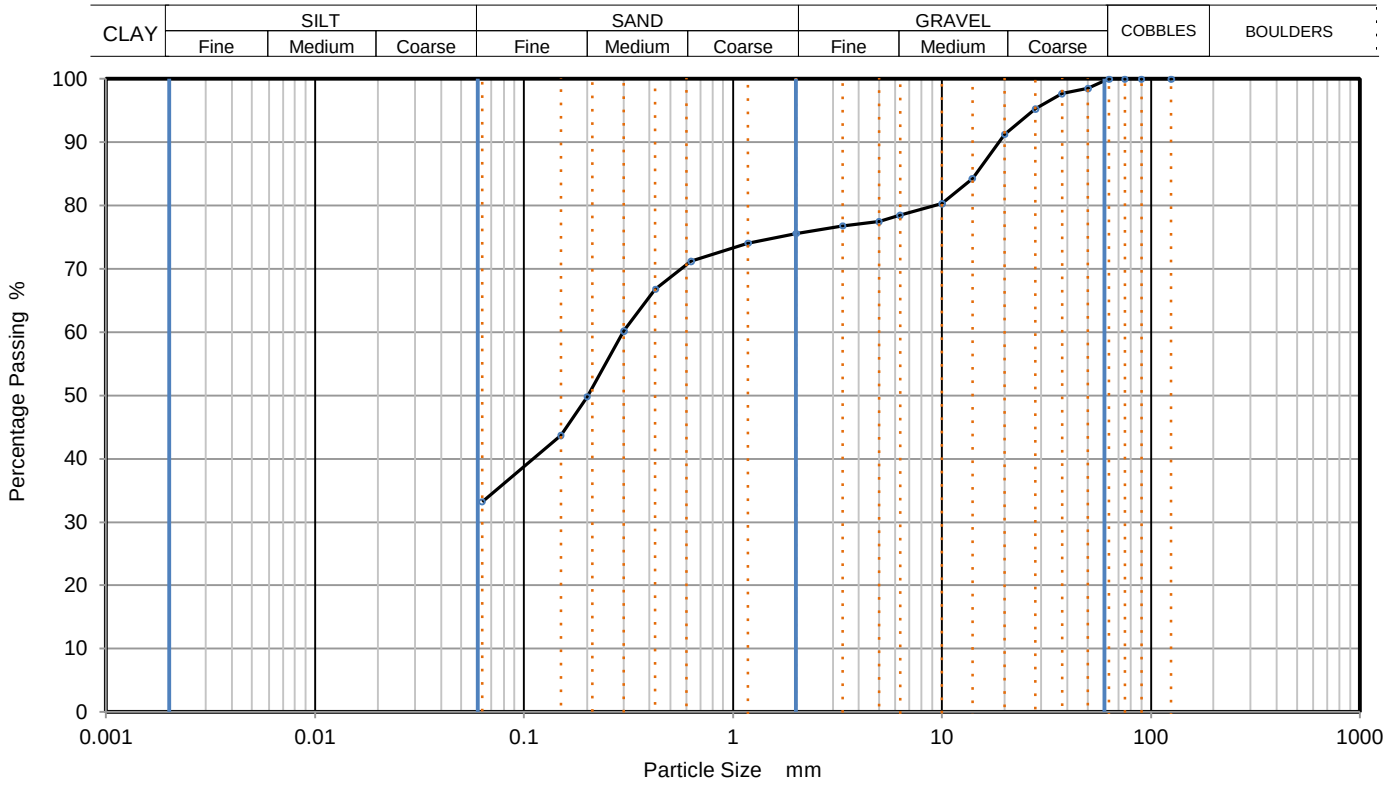
Approved by	Date	Sheet ID:
Matt Stokes - Senior Technician	20/09/2022	KL002R PSD

PARTICLE SIZE DISTRIBUTION

				Project No.	14492
				Borehole/Pit No.	TP03
Project Name	Lympstone			Sample No.	
Soil Description	Brown very gravelly very silty/clayey SAND			Depth, m	0.20
Specimen Reference	2	Specimen Depth	m	Sample Type	B
Test Method	BS EN ISO 17892-4: 2016, clause 5.2				



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	99		
37.5	98		
28	95		
20	91		
14	84		
10	80		
6.3	79		
5	78		
3.35	77		
2	76		
1.18	74		
0.63	71		
0.425	67		
0.3	60		
0.2	50		
0.15	44		
0.063	33		

Dry Mass of sample, g	10718

Sample Proportions	% dry mass
Very coarse	0
Gravel	24
Sand	43
Fines <0.063mm	33

Grading Analysis		
D100	mm	
D60	mm	0.298
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with BS EN ISO 17892-4: 2016

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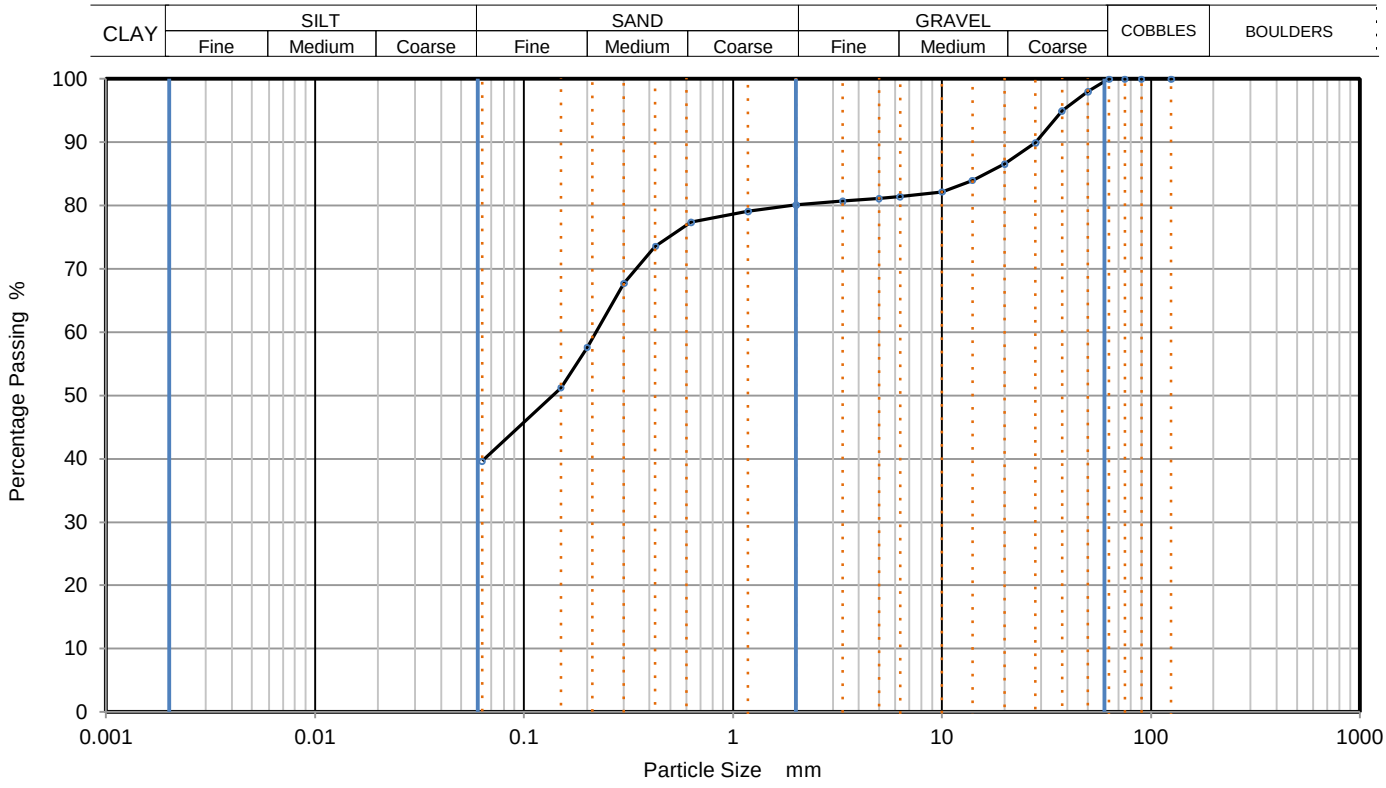
Approved by	Date	Sheet ID:
Matt Stokes - Senior Technician	20/09/2022	KL002R PSD

PARTICLE SIZE DISTRIBUTION

				Project No.	14492
				Borehole/Pit No.	TP04
Project Name	Lympstone			Sample No.	
Soil Description	Orangish brown slightly gravelly sandy silty CLAY			Depth, m	0.30
Specimen Reference	2	Specimen Depth	m	Sample Type	B
Test Method	BS EN ISO 17892-4: 2016, clause 5.2				



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	98		
37.5	95		
28	90		
20	87		
14	84		
10	82		
6.3	81		
5	81		
3.35	81		
2	80		
1.18	79		
0.63	77		
0.425	74		
0.3	68		
0.2	58		
0.15	51		
0.063	40		

Dry Mass of sample, g	10850

Sample Proportions	% dry mass
Very coarse	0
Gravel	20
Sand	41
Fines <0.063mm	40

Grading Analysis		
D100	mm	
D60	mm	0.22
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with BS EN ISO 17892-4: 2016

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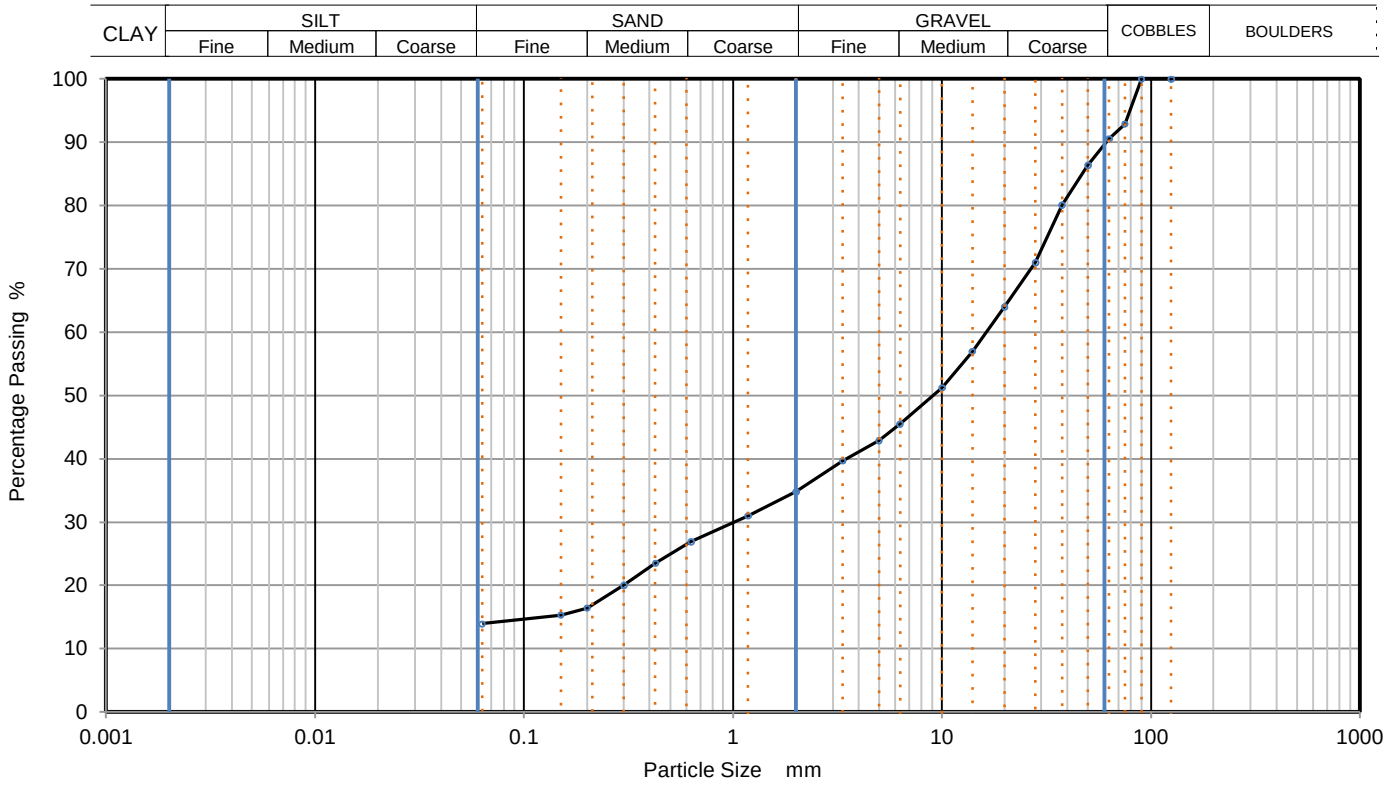
Approved by	Date	Sheet ID:
Matt Stokes - Senior Technician	20/09/2022	KL002R PSD

PARTICLE SIZE DISTRIBUTION

				Project No.	14492
				Borehole/Pit No.	TP05
Project Name	Lympstone			Sample No.	
Soil Description	Orangish brown silty/clayey very sandy GRAVEL with medium cobble content			Depth, m	0.70
Specimen Reference	2	Specimen Depth	m	Sample Type	B
Test Method	BS EN ISO 17892-4: 2016, clause 5.2				



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	93		
63	91		
50	86		
37.5	80		
28	71		
20	64		
14	57		
10	51		
6.3	46		
5	43		
3.35	40		
2	35		
1.18	31		
0.63	27		
0.425	24		
0.3	20		
0.2	16		
0.15	15		
0.063	14		

Dry Mass of sample, g	17272

Sample Proportions	% dry mass
Very coarse	9
Gravel	56
Sand	21
Fines <0.063mm	14

Grading Analysis		
D100	mm	
D60	mm	16.3
D30	mm	1.01
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

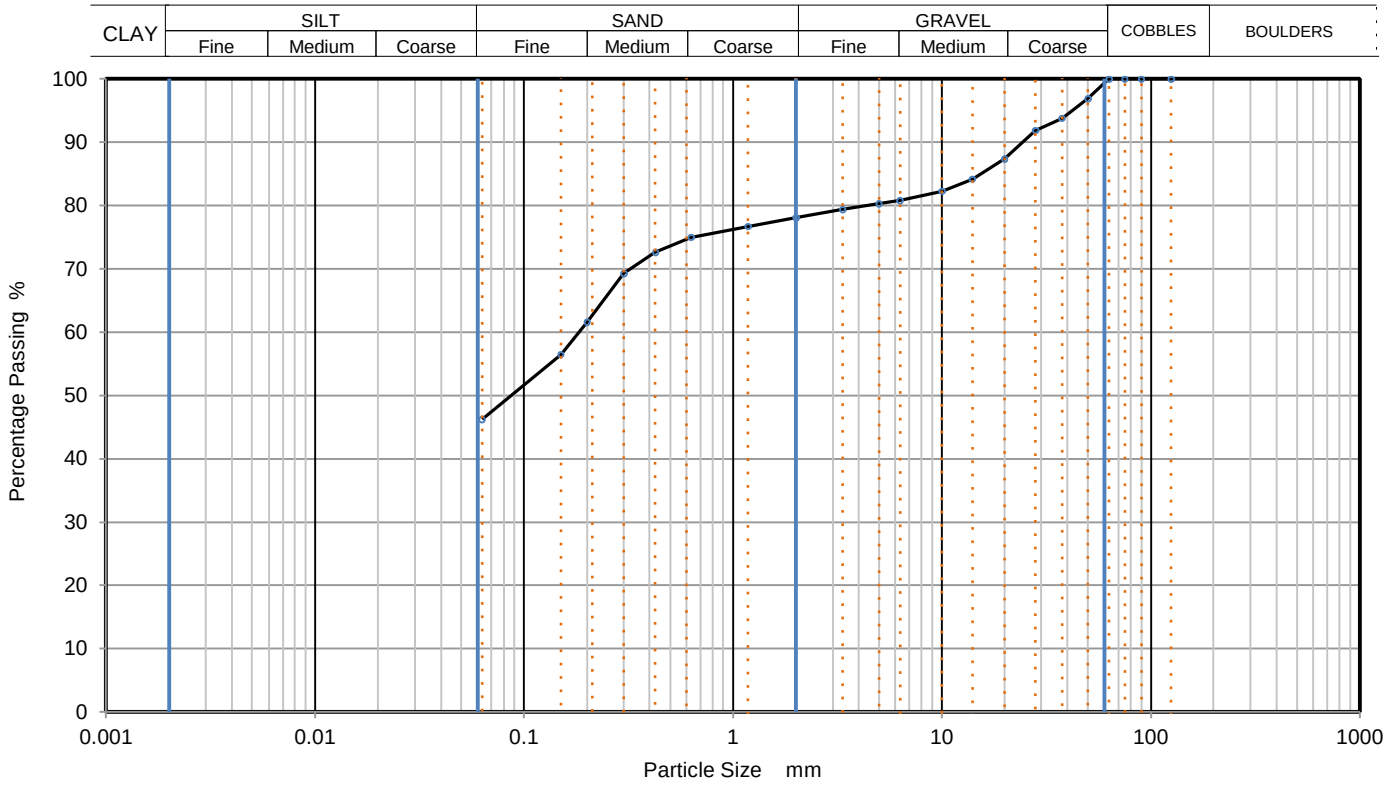
Remarks
Preparation and testing in accordance with BS EN ISO 17892-4: 2016 - Deviation to standard as insufficient material provided in order to meet the minimum mass requirement

8260
Accredited to ISO/IEC 17025:2017

Approved by	Date	Sheet ID:
Matt Stokes - Senior Technician	20/09/2022	KL002R PSD

PARTICLE SIZE DISTRIBUTION

				Project No.	14492
				Borehole/Pit No.	TP07
Project Name	Lympstone			Sample No.	
Soil Description	Orangish brown slightly gravelly slightly sandy silty CLAY			Depth, m	1.00
Specimen Reference	2	Specimen Depth	m	Sample Type	B
Test Method	BS EN ISO 17892-4: 2016, clause 5.2				



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	97		
37.5	94		
28	92		
20	87		
14	84		
10	82		
6.3	81		
5	80		
3.35	79		
2	78		
1.18	77		
0.63	75		
0.425	73		
0.3	69		
0.2	62		
0.15	57		
0.063	46		

Dry Mass of sample, g	11575

Sample Proportions	% dry mass
Very coarse	0
Gravel	22
Sand	32
Fines <0.063mm	46

Grading Analysis		
D100	mm	
D60	mm	0.183
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with BS EN ISO 17892-4: 2016

8260
Accredited to ISO/IEC 17025:2017

Approved by	Date	Sheet ID:
Matt Stokes - Senior Technician	20/09/2022	KL002R PSD

Appendix F California Bearing Ratio & Infiltration Testing Certificates

1 DAY INFILTRATION ASSESSMENT - WORKSHEET

Site: Overspill Car Park, Lympstone

Client: Vivo Defence Services Limited

Test Location TP01 **Date of start** 23/08/2022 **Date at end** 24/08/2022

Test Run 1		Test Run 2		Test Run 3	
Pit Dimensions (m)		**Pit Dimensions (m)**		**Pit Dimensions (m)**	
Trial Pit Length (L)	2.700m	Trial Pit Length (L)		Trial Pit Length (L)	
Trial Pit Breadth / Width (B)	0.500m	Trial Pit Breadth / Width (B)		Trial Pit Breadth / Width (B)	
Effective Depth (D)	2.500m	Effective Depth (D)		Effective Depth (D)	
Time at Start of Filling	11.06	Time at Start of Filling		Time at Start of Filling	
Time at End of Filling	11.06	Time at End of Filling		Time at End of Filling	
Depth from Surface to Water (D_{TW})	0.930m	Depth below Surface to Water (D_{TW})		Depth below Surface to Water (D_{TW})	
Water Depth (W_D)	1.570m	Water Depth (W_D)	-	Water Depth (W_D)	-
Maximum Fill Volume (V_W)	2.120m³	Maximum Fill Volume (V_W)	-	Maximum Fill Volume (V_W)	-
Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No
Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)	
Corrected Water Volume (V_{WC})	2.120m³	Corrected Water Volume (V_{WC})	-	Corrected Water Volume (V_{WC})	-

Time to soakaway				Time to soakaway				Time to soakaway			
Time		Depth to water	Duration	Time		Depth to water	Duration	Time		Depth to water	Duration
Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds
1	11.060	0.930	0								
1	11.070	0.930	60								
1	11.080	0.935	120								
1	11.090	0.935	180								
1	11.100	0.940	240								
1	11.260	0.960	1200								
1	12.370	1.005	5460								
1	14.210	1.060	11700								
1	16.150	1.080	18540								
2	8.260	1.330	76800								
2	13.200	1.370	94440								
			94440								
			94440								
			94440								
			94440								
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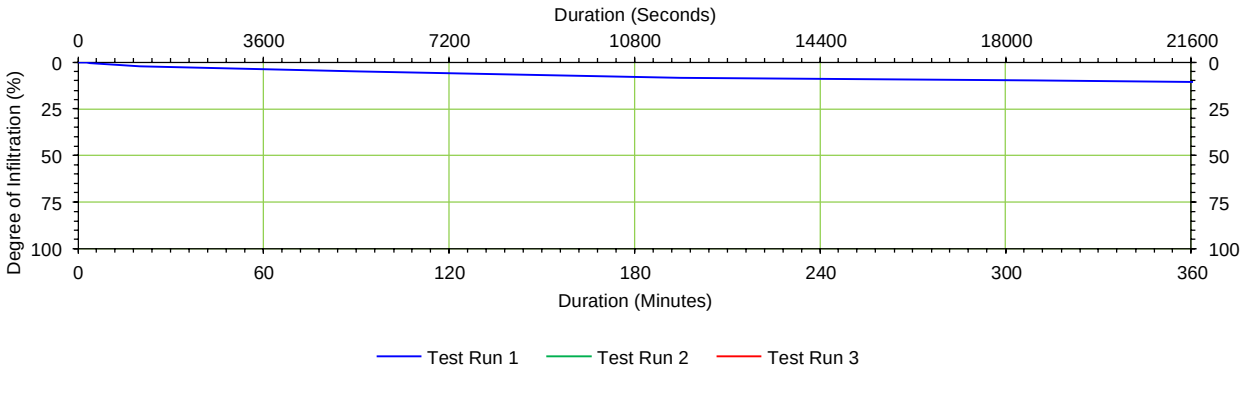
			94440								
25% water loss (75% full)		1.323m		**25% water loss (75% full)**		-		**25% water loss (75% full)**		-	
50% water loss (50% full)		1.715m		**50% water loss (50% full)**		-		**50% water loss (50% full)**		-	
75% water loss (25% full)		2.108m		**75% water loss (25% full)**		-		**75% water loss (25% full)**		-	
25% time (seconds)		75052 sec		**25% time (seconds)**		-		**25% time (seconds)**		-	
75% time (seconds)		-		**75% time (seconds)**		-		**75% time (seconds)**		-	
Vp 75-25		1.060m³		**Vp 75-25**		-		**Vp 75-25**		-	
ap 50 (Actual area from test)		6.374m³		**ap 50 (Actual area from test)**		-		**ap 50 (Actual area from test)**		-	
tp 75 - 25				**tp 75 - 25**				**tp 75 - 25**			
Soil Infiltration Rate		-		**Soil Infiltration Rate**		-		**Soil Infiltration Rate**		-	



1 DAY INFILTRATION ASSESSMENT - WORKSHEET

Site: Overspill Car Park, Lympstone

Client: Vivo Defence Services Limited

Test Location TP02 **Date of start** 23/08/2022 **Date at end** 24/08/2022

Test Run 1		Test Run 2		Test Run 3	
Pit Dimensions (m)		**Pit Dimensions (m)**		**Pit Dimensions (m)**	
Trial Pit Length (L)	2.500m	Trial Pit Length (L)		Trial Pit Length (L)	
Trial Pit Breadth / Width (B)	0.500m	Trial Pit Breadth / Width (B)		Trial Pit Breadth / Width (B)	
Effective Depth (D)	1.000m	Effective Depth (D)		Effective Depth (D)	
Time at Start of Filling	12.28	Time at Start of Filling		Time at Start of Filling	
Time at End of Filling	12.28	Time at End of Filling		Time at End of Filling	
Depth from Surface to Water (D_{TW})	0.200m	Depth below Surface to Water (D_{TW})		Depth below Surface to Water (D_{TW})	
Water Depth (W_D)	0.800m	Water Depth (W_D)	-	Water Depth (W_D)	-
Maximum Fill Volume (V_W)	1.000m³	Maximum Fill Volume (V_W)	-	Maximum Fill Volume (V_W)	-
Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No
Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)	
Corrected Water Volume (V_{WC})	1.000m³	Corrected Water Volume (V_{WC})	-	Corrected Water Volume (V_{WC})	-

Time to soakaway

Time		Depth to water	Duration	Time		Depth to water	Duration	Time		Depth to water	Duration
Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds
1	12.280	0.200	0								
1	12.290	0.220	60								
1	12.300	0.230	120								
1	12.310	0.240	180								
1	12.320	0.240	240								
1	12.330	0.240	300								
1	13.170	0.305	2940								
1	14.210	0.340	6780								
1	16.150	0.370	13620								
2	8.300	0.520	72120								
2	13.200	0.540	89520								
			89520								
			89520								
			89520								
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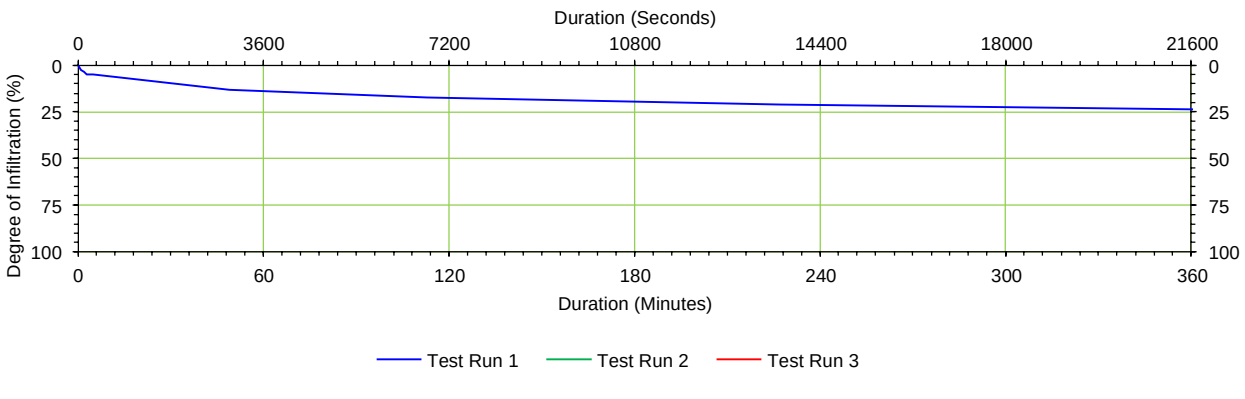
			89520								

25% water loss (75% full)	0.400m	**25% water loss (75% full)**	-	**25% water loss (75% full)**	-
50% water loss (50% full)	0.600m	**50% water loss (50% full)**	-	**50% water loss (50% full)**	-
75% water loss (25% full)	0.800m	**75% water loss (25% full)**	-	**75% water loss (25% full)**	-
25% time (seconds)	25320 sec	**25% time (seconds)**	-	**25% time (seconds)**	-
75% time (seconds)	-	**75% time (seconds)**	-	**75% time (seconds)**	-
Vp 75-25	0.500m³	**Vp 75-25**	-	**Vp 75-25**	-
ap 50 (Actual area from test)	3.650m³	**ap 50 (Actual area from test)**	-	**ap 50 (Actual area from test)**	-
tp 75 - 25		**tp 75 - 25**		**tp 75 - 25**	
Soil Infiltration Rate	-	**Soil Infiltration Rate**	-	**Soil Infiltration Rate**	-



1 DAY INFILTRATION ASSESSMENT - WORKSHEET

Site: Overspill Car Park, Lympstone

Client: Vivo Defence Services Limited

Test Location TP03 **Date of start** 23/08/2022 **Date at end** 24/08/2022

Test Run 1		Test Run 2		Test Run 3	
Pit Dimensions (m)		**Pit Dimensions (m)**		**Pit Dimensions (m)**	
Trial Pit Length (L)	2.800m	Trial Pit Length (L)		Trial Pit Length (L)	
Trial Pit Breadth / Width (B)	0.500m	Trial Pit Breadth / Width (B)		Trial Pit Breadth / Width (B)	
Effective Depth (D)	1.000m	Effective Depth (D)		Effective Depth (D)	
Time at Start of Filling	13.44	Time at Start of Filling		Time at Start of Filling	
Time at End of Filling	13.44	Time at End of Filling		Time at End of Filling	
Depth from Surface to Water (D_{TW})	0.260m	Depth below Surface to Water (D_{TW})		Depth below Surface to Water (D_{TW})	
Water Depth (W_D)	0.740m	Water Depth (W_D)	-	Water Depth (W_D)	-
Maximum Fill Volume (V_W)	1.036m³	Maximum Fill Volume (V_W)	-	Maximum Fill Volume (V_W)	-
Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No
Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)	
Corrected Water Volume (V_{WC})	1.036m³	Corrected Water Volume (V_{WC})	-	Corrected Water Volume (V_{WC})	-

Time to soakaway				Time to soakaway				Time to soakaway			
Time		Depth to water	Duration	Time		Depth to water	Duration	Time		Depth to water	Duration
Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds
1	13.440	0.260	0								
1	13.450	0.275	60								
1	13.480	0.295	240								
1	14.210	0.350	2220								
1	16.120	0.395	8880								
2	8.350	0.490	67860								
2	13.220	0.505	85080								
			85080								
			85080								
			85080								
			85080								
			85080								
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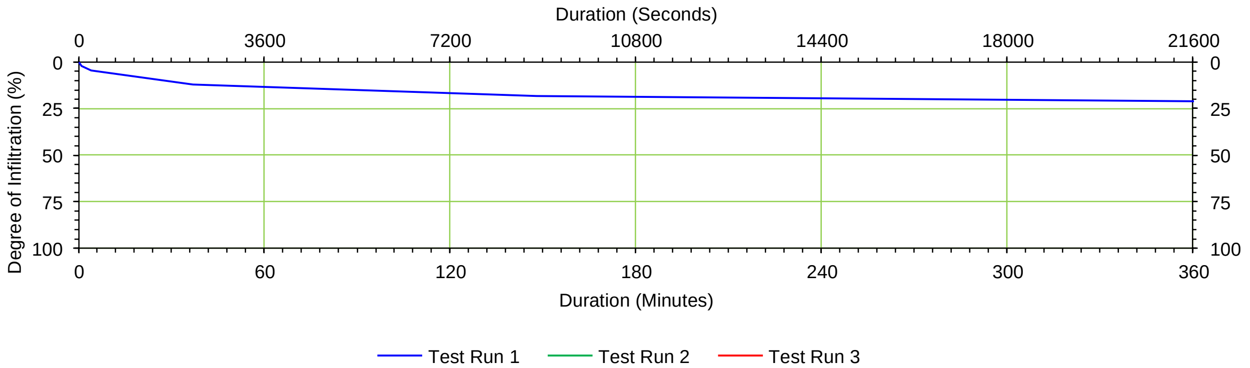
Test Run 1		Test Run 2		Test Run 3	
25% water loss (75% full)	0.445m	**25% water loss (75% full)**	-	**25% water loss (75% full)**	-
50% water loss (50% full)	0.630m	**50% water loss (50% full)**	-	**50% water loss (50% full)**	-
75% water loss (25% full)	0.815m	**75% water loss (25% full)**	-	**75% water loss (25% full)**	-
25% time (seconds)	39922 sec	**25% time (seconds)**	-	**25% time (seconds)**	-
75% time (seconds)	-	**75% time (seconds)**	-	**75% time (seconds)**	-
Vp 75-25	0.518m³	**Vp 75-25**	-	**Vp 75-25**	-
ap 50 (Actual area from test)	3.842m³	**ap 50 (Actual area from test)**	-	**ap 50 (Actual area from test)**	-
tp 75 - 25		**tp 75 - 25**		**tp 75 - 25**	
Soil Infiltration Rate	-	**Soil Infiltration Rate**	-	**Soil Infiltration Rate**	-



1 DAY INFILTRATION ASSESSMENT - WORKSHEET

Site: Overspill Car Park, Lympstone

Client: Vivo Defence Services Limited

Test Location TP04 **Date of start** 23/08/2022 **Date at end** 24/08/2022

Test Run 1		Test Run 2		Test Run 3	
Pit Dimensions (m)		**Pit Dimensions (m)**		**Pit Dimensions (m)**	
Trial Pit Length (L)	2.800m	Trial Pit Length (L)		Trial Pit Length (L)	
Trial Pit Breadth / Width (B)	0.500m	Trial Pit Breadth / Width (B)		Trial Pit Breadth / Width (B)	
Effective Depth (D)	1.200m	Effective Depth (D)		Effective Depth (D)	
Time at Start of Filling	14.54	Time at Start of Filling		Time at Start of Filling	
Time at End of Filling	14.54	Time at End of Filling		Time at End of Filling	
Depth from Surface to Water (D_{TW})	0.190m	Depth below Surface to Water (D_{TW})		Depth below Surface to Water (D_{TW})	
Water Depth (W_D)	1.010m	Water Depth (W_D)	-	Water Depth (W_D)	-
Maximum Fill Volume (V_W)	1.414m³	Maximum Fill Volume (V_W)	-	Maximum Fill Volume (V_W)	-
Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No
Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)	
Corrected Water Volume (V_{WC})	1.414m³	Corrected Water Volume (V_{WC})	-	Corrected Water Volume (V_{WC})	-

Time to soakaway				Time to soakaway				Time to soakaway			
Time		Depth to water	Duration	Time		Depth to water	Duration	Time		Depth to water	Duration
Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds
1	14.540	0.190	0								
1	14.550	0.210	60								
1	15.130	0.240	1140								
1	16.110	0.280	4620								
2	8.380	0.400	63840								
2	13.240	0.410	81000								
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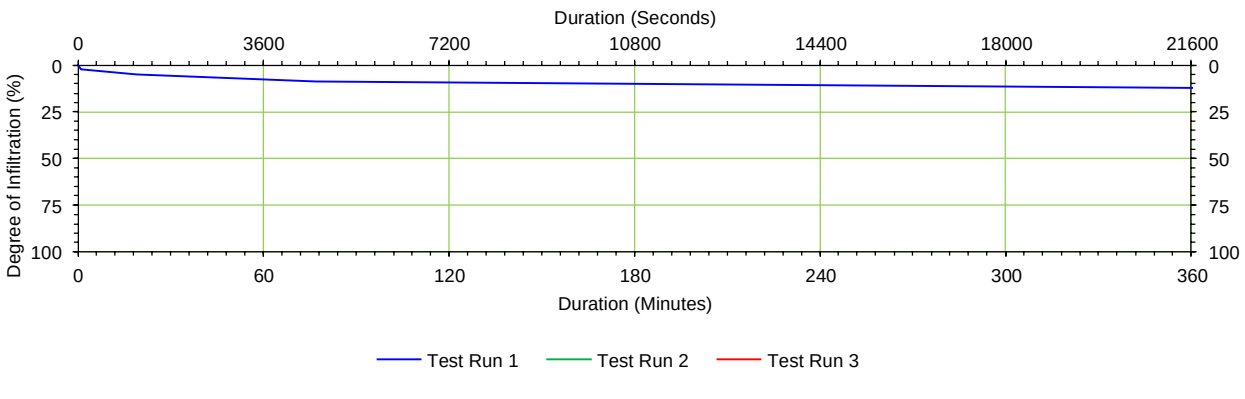
25% water loss (75% full)	0.443m	**25% water loss (75% full)**	-	**25% water loss (75% full)**	-
50% water loss (50% full)	0.695m	**50% water loss (50% full)**	-	**50% water loss (50% full)**	-
75% water loss (25% full)	0.948m	**75% water loss (25% full)**	-	**75% water loss (25% full)**	-
25% time (seconds)	-	**25% time (seconds)**	-	**25% time (seconds)**	-
75% time (seconds)	-	**75% time (seconds)**	-	**75% time (seconds)**	-
Vp 75-25	0.707m³	**Vp 75-25**	-	**Vp 75-25**	-
ap 50 (Actual area from test)	4.733m³	**ap 50 (Actual area from test)**	-	**ap 50 (Actual area from test)**	-
tp 75 - 25		**tp 75 - 25**		**tp 75 - 25**	
Soil Infiltration Rate	-	**Soil Infiltration Rate**	-	**Soil Infiltration Rate**	-



1 DAY INFILTRATION ASSESSMENT - WORKSHEET

Site: Overspill Car Park, Lympstone

Client: Vivo Defence Services Limited

Test Location TP05 **Date of start** 23/08/2022 **Date at end** 24/08/2022

Test Run 1		Test Run 2		Test Run 3	
Pit Dimensions (m)		**Pit Dimensions (m)**		**Pit Dimensions (m)**	
Trial Pit Length (L)	2.700m	Trial Pit Length (L)		Trial Pit Length (L)	
Trial Pit Breadth / Width (B)	0.500m	Trial Pit Breadth / Width (B)		Trial Pit Breadth / Width (B)	
Effective Depth (D)	1.000m	Effective Depth (D)		Effective Depth (D)	
Time at Start of Filling	15.41	Time at Start of Filling		Time at Start of Filling	
Time at End of Filling	15.41	Time at End of Filling		Time at End of Filling	
Depth from Surface to Water (D_{TW})	0.260m	Depth below Surface to Water (D_{TW})		Depth below Surface to Water (D_{TW})	
Water Depth (W_D)	0.740m	Water Depth (W_D)	-	Water Depth (W_D)	-
Maximum Fill Volume (V_W)	0.999m³	Maximum Fill Volume (V_W)	-	Maximum Fill Volume (V_W)	-
Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No	Gravel used to backfill Test Pit	No
Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)		Porosity of Gravel Backfill (P_t)	
Corrected Water Volume (V_{WC})	0.999m³	Corrected Water Volume (V_{WC})	-	Corrected Water Volume (V_{WC})	-

Time to soakaway				Time to soakaway				Time to soakaway			
Time		Depth to water	Duration	Time		Depth to water	Duration	Time		Depth to water	Duration
Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds	Day	Time	(m bgl)	Seconds
1	15.410	0.260	0								
1	15.430	0.260	120								
1	15.440	0.260	180								
1	16.110	0.270	1800								
2	8.400	0.330	61140								
2	13.260	0.340	78300								
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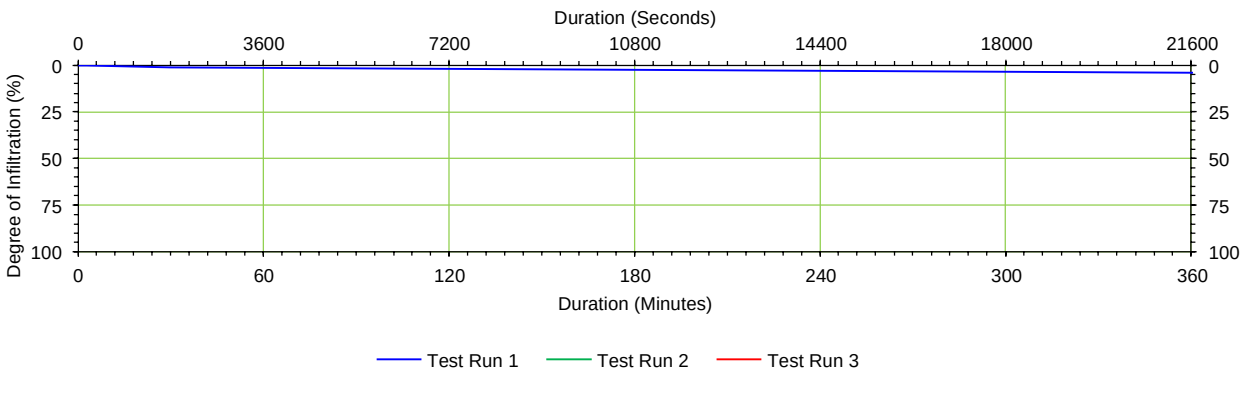
25% water loss (75% full)			0.445m	**25% water loss (75% full)**			-	**25% water loss (75% full)**			-
50% water loss (50% full)			0.630m	**50% water loss (50% full)**			-	**50% water loss (50% full)**			-
75% water loss (25% full)			0.815m	**75% water loss (25% full)**			-	**75% water loss (25% full)**			-
25% time (seconds)			-	**25% time (seconds)**			-	**25% time (seconds)**			-
75% time (seconds)			-	**75% time (seconds)**			-	**75% time (seconds)**			-
Vp 75-25			0.500m³	**Vp 75-25**			-	**Vp 75-25**			-
ap 50 (Actual area from test)			3.718m³	**ap 50 (Actual area from test)**			-	**ap 50 (Actual area from test)**			-
tp 75 - 25				**tp 75 - 25**				**tp 75 - 25**			
Soil Infiltration Rate		-		**Soil Infiltration Rate**		-		**Soil Infiltration Rate**		-	



Hydrock

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Vivo Defence Services Ltd

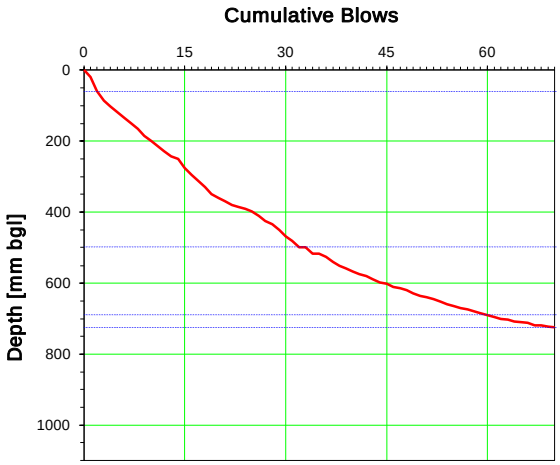
Site Name: Overspill Car Park, Lympstone

Job Number: C-24227-C
Date Tested: 24/08/2022

Test Results:

Sample Description:
Sample Number:
Start Depth [mm bgl]:
Test Location: TP01

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Layer 1	2	2	**8**	60	60
Layer 2	30	32	**18**	438	498
Layer 3	28	60	**39**	192	690
Layer 4	10	70	**80**	35	725



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory: Name: Signed:

Position: *for and behalf of*

Date Reported: Page 1 of 1
Form Number: HD-TRL-DCP 01

Hydrock

Hydrock

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Vivo Defence Service Ltd

Site Name: Overspill Car Park, Lympstone

Job Number: C-24227-C
Date Tested: 24/08/2022

Test Results:

Sample Description:
Sample Number:
Start Depth [mm bgl]:
Test Location: TP02

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Layer 1	6	6	**10**	155	155
Layer 2	46	52	**19**	642	797

Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory: Name: Signed:

Position: *for and behalf of*

Date Reported: Page 1 of 1
Form Number: HD-TRL-DCP 01

Hydrock

Hydrock

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Vivo Defense Services Ltd

Site Name: Overspill Car Park, Lympstone

Job Number: C-24227-C
Date Tested: 24/08/2022

Test Results:

Sample Description:
Sample Number:
Start Depth [mm bgl]:
Test Location: TP03

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Layer 1	7	7	**18**	100	100
Layer 2	31	38	**50**	170	270
Layer 3	43	81	**73**	165	435
Layer 4	19	100	**50**	105	540
Layer 5	18	118	**38**	128	668

Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory: Name: Signed:

Position:

for and behalf of

Hydrock

Date Reported:
Form Number: HD-TRL-DCP 01

Hydrock

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Vivo Defense Services Ltd

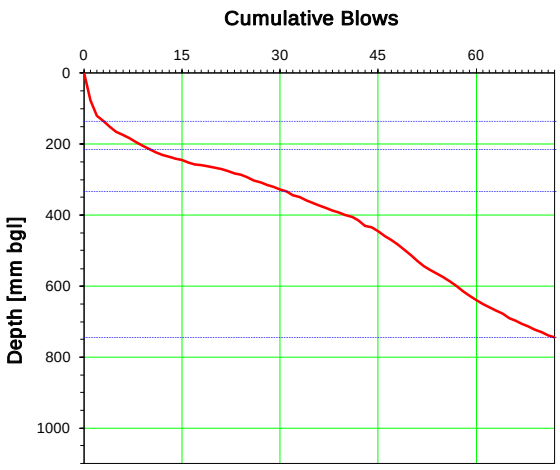
Site Name: Overspill Car Park, Lympstone

Job Number: C-24227-C
Date Tested: 24/08/2022

Test Results:

Sample Description:
Sample Number:
Start Depth [mm bgl]:
Test Location: TP04

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Layer 1	3	3	**5**	135	135
Layer 2	7	10	**23**	80	215
Layer 3	21	31	**48**	119	334
Layer 4	41	72	**26**	411	745



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory: Name: Signed:

Position: *for and behalf of*

Date Reported: Page 1 of 1
Form Number: HD-TRL-DCP 01

Hydrock

Hydrock

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Vivo Defense Services Ltd

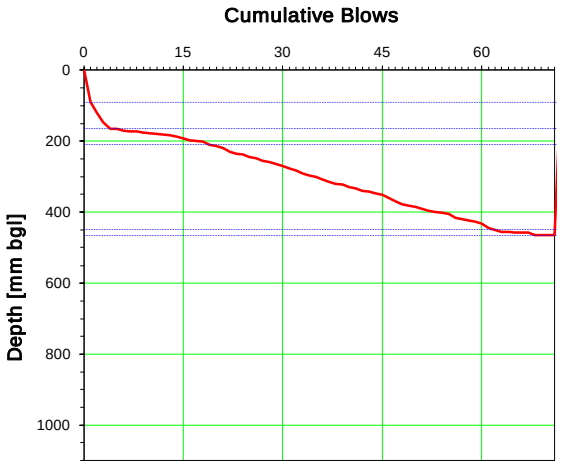
Site Name: Overspill Car Park, Lympstone

Job Number: C-24227-C
Date Tested: 24/08/2022

Test Results:

Sample Description:
Sample Number:
Start Depth [mm bgl]:
Test Location: TP05

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Layer 1	1	1	**3**	90	90
Layer 2	4	5	**14**	75	165
Layer 3	14	19	**88**	45	210
Layer 4	43	62	**49**	240	450
Layer 5	9	71	**>100**	15	465



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory: Name: Signed:

Position:

for and behalf of

Hydrock

Date Reported:
Form Number: HD-TRL-DCP 01

Hydrock

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Vivo Defense Services Ltd

Site Name: Overspill Car Park, Lympstone

Job Number: C-24227-C
Date Tested: 24/08/2022

Test Results:

Sample Description:
Sample Number:
Start Depth [mm bgl]:
Test Location: TP06

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Layer 1	9	9	**17**	137	137
Layer 2	29	38	**33**	234	371
Layer 3	25	63	**26**	253	624
Layer 4	16	79	**33**	129	753

Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory: Name: Signed:

Position: *for and behalf of*

Date Reported: Page 1 of 1
Form Number: HD-TRL-DCP 01

Hydrock

Hydrock

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Vivo Defense Services Ltd

Job Number: C-24227-C

Site Name: Overspill Car Park, Lympstone

Date Tested: 24/08/2022

Test Results:

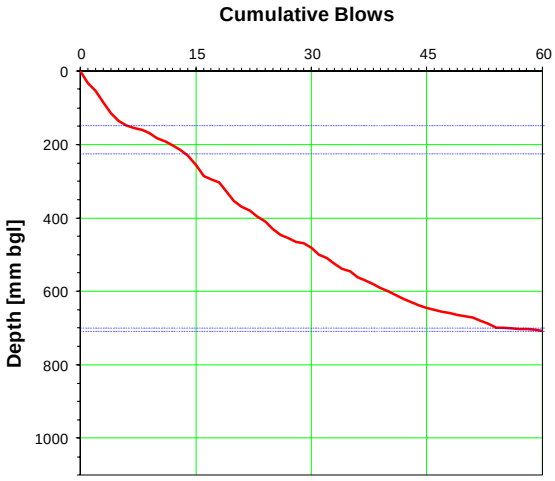
Sample Description:

Sample Number:

Start Depth [mm bgl]:

Test Location: TP07

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Layer 1	6	6	**10**	149	149
Layer 2	9	15	**32**	76	225
Layer 3	40	55	**22**	475	700
Layer 4	5	60	**>100**	8	708



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory: Name: Signed:

Position: *for and behalf of*

Date Reported: Page 1 of 1

Form Number: HD-TRL-DCP 01 Hydrock

Appendix G Waste Assessment

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

Q0G47-LK6UR-XFMB1

Job name

22-80586_HWOL_Results

Description/Comments

i2 cert: 22-80586

Project

24227

Site

Lympstone

Classified by

Name:
Matthew Keehn
Company:
Hydrock Consultants Ltd
Date:
21 Sep 2022 08:28 GMT
Telephone:

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	08 Sep 2020

Next 3 year Refresher due by Sep 2023

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP02--23082022-0.10		Non Hazardous		2
2	TP03--23082022-0.50		Non Hazardous		4
3	TP04--23082022-0.10		Non Hazardous		6
4	TP05--23082022-0.30		Non Hazardous		8
5	TP07--23082022-1.00		Non Hazardous		10

Related documents

#	Name	Description
1	22-80586_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	Hydrock Standard plus Cresol (ammended Lead)	waste stream template used to create this Job

Report

Created by: Matthew Keehn
Created date: 21 Sep 2022 08:28 GMT

Classification of sample: TP02--23082022-0.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP02--23082022-0.10
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.9 mg/kg	1.32	9.179 mg/kg	0.000918 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.31 mg/kg	2.775	0.757 mg/kg	0.0000757 %	✓	
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.5 mg/kg	13.43	5.909 mg/kg	0.000591 %	✓	
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14 mg/kg	1.462	20.462 mg/kg	0.00205 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		10 mg/kg	1.126	9.908 mg/kg	0.000991 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	21	mg/kg		18.48	mg/kg	0.00185 %	✓	
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				8.4	mg/kg	1.579	11.676	mg/kg	0.00117 %	✓	
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
		034-002-00-8											
30		zinc { zinc oxide }				33	mg/kg	1.245	36.146	mg/kg	0.00361 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
31		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
				P1186									
32		vanadium { divanadium pentaoxide; vanadium pentoxide }				18	mg/kg	1.785	28.277	mg/kg	0.00283 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
										Total:	0.015 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP03--23082022-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP03--23082022-0.50
Moisture content:
7.1%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.1% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9 mg/kg	1.32	11.039 mg/kg	0.0011 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.46 mg/kg	2.775	1.186 mg/kg	0.000119 %	✓	
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2 mg/kg	13.43	<2.686 mg/kg	<0.000269 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14 mg/kg	1.126	14.643 mg/kg	0.00146 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
18		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	16	mg/kg		14.864	mg/kg	0.00149 %	✓	
23		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		13	mg/kg	1.579	19.076	mg/kg	0.00191 %	✓	
26		pH			PH		7.9	pH		7.9	pH	7.9 pH		
27		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
28		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		31	mg/kg	1.245	35.847	mg/kg	0.00358 %	✓	
31		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
32		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		29	mg/kg	1.785	48.095	mg/kg	0.00481 %	✓	
											Total:	0.0186 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP04--23082022-0.10

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP04--23082022-0.10
Moisture content:
9.4%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.4% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7 mg/kg	1.32	8.374 mg/kg	0.000837 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.31 mg/kg	2.775	0.779 mg/kg	0.0000779 %	✓	
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4 mg/kg	13.43	4.867 mg/kg	0.000487 %	✓	
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9.4 mg/kg	1.126	9.589 mg/kg	0.000959 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
18		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	21	mg/kg		19.026	mg/kg	0.0019 %	✓	
23		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		8.2	mg/kg	1.579	11.734	mg/kg	0.00117 %	✓	
26		pH			PH		6.6	pH		6.6	pH	6.6 pH		
27		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
28		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		30	mg/kg	1.245	33.831	mg/kg	0.00338 %	✓	
31		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
32		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		17	mg/kg	1.785	27.495	mg/kg	0.00275 %	✓	
											Total:	0.0144 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP05--23082022-0.30

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP05--23082022-0.30
Moisture content:
3.6%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 3.6% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9.3 mg/kg	1.32	11.837 mg/kg	0.00118 %	✓	
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.46 mg/kg	2.775	1.231 mg/kg	0.000123 %	✓	
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.4 mg/kg	13.43	5.179 mg/kg	0.000518 %	✓	
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8 mg/kg	1.923	<3.462 mg/kg	<0.000346 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
16	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12 mg/kg	1.126	13.024 mg/kg	0.0013 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
18		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	16	mg/kg		15.424	mg/kg	0.00154 %	✓	
23		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		11	mg/kg	1.579	16.749	mg/kg	0.00167 %	✓	
26		pH			PH		7.6	pH		7.6	pH	7.6 pH		
27		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
28		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		31	mg/kg	1.245	37.197	mg/kg	0.00372 %	✓	
31		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
32		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		28	mg/kg	1.785	48.186	mg/kg	0.00482 %	✓	
											Total:	0.0187 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP07--23082022-1.00

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP07--23082022-1.00
Moisture content:
7.8%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.8% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	14.608	mg/kg	0.00146 %	✓	
5		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
6		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.7	mg/kg	2.775	1.791	mg/kg	0.000179 %	✓	
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<0.2	mg/kg	13.43	<2.686	mg/kg	<0.000269 %		<LOD
12		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
13		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	35.077	mg/kg	0.00351 %		
14		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.8	mg/kg	1.923	<3.462	mg/kg	<0.000346 %		<LOD
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17	mg/kg	1.126	17.647	mg/kg	0.00176 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
18		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	24	mg/kg		22.128	mg/kg	0.00221 %	✓	
23		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		18	mg/kg	1.579	26.213	mg/kg	0.00262 %	✓	
26		pH			PH		7.4	pH		7.4	pH	7.4 pH		
27		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
28		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
29		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		55	mg/kg	1.245	63.119	mg/kg	0.00631 %	✓	
31		monohydric phenols			P1186		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
32		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		33	mg/kg	1.785	54.316	mg/kg	0.00543 %	✓	
											Total:	0.0247 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **boron tribromide/trichloride/trifluoride (combined)** (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride
Data source: N/A
Data source date: 06 Aug 2015
Hazard Statements: EUH014 , Acute Tox. 2; H330 , Acute Tox. 2; H300 , Skin Corr. 1A; H314 , Skin Corr. 1B; H314

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

lead compounds with the exception of those specified elsewhere in this Annex

GB MCL index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

monohydric phenols (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 £ conc. < 3 % , Eye Irrit. 2; H319 1 £ conc. < 3 % , Aquatic Chronic 2; H411

divanadium pentaoxide; vanadium pentoxide (EC Number: 215-239-8, CAS Number: 1314-62-1)

GB MCL index number: 023-001-00-8
Description/Comments:
Additional Hazard Statement(s): Carc. 1B; H350
Reason for additional Hazards Statement(s):
20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on hazard statements

beryllium {beryllium oxide}

Worst case species based on hazard statements

boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on hazard statements

cadmium {cadmium sulfide}

Worst case species based on hazard statements

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Worst case species based on hazard statements

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case species based on hazard statements

copper {dicopper oxide; copper (I) oxide}

Most likely common species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Worst case species

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Worst case species based on hazard statements

mercury {mercury dichloride}

Worst case species based on hazard statements

nickel {nickel dihydroxide}

Worst case species based on hazard statements

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species based on hazard statements

zinc {zinc oxide}

Worst case species based on hazard statements

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species based on hazard statements.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2022.263.5340.9974 (20 Sep 2022)
HazWasteOnline Database: 2022.263.5340.9974 (20 Sep 2022)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1stEditionv1.2.GB-Oct2021
CLP Regulation - Regulation1272/2008/ECof16December2008
1st ATP - Regulation790/2009/ECof10August2009
2nd ATP - Regulation286/2011/ECof10March2011
3rd ATP - Regulation618/2012/EUof10July2012
4th ATP - Regulation487/2013/EUof8May2013
Correction to 1st ATP - Regulation758/2013/EUof7August2013
5th ATP - Regulation944/2013/EUof2October2013
6th ATP - Regulation605/2014/EUof5June2014
WFD Annex III replacement - Regulation1357/2014/EUof18December2014
Revised List of Waste 2014 - Decision2014/955/EUof18December2014
7th ATP - Regulation2015/1221/EUof24July2015
8th ATP - Regulation(EU)2016/918of19May2016
9th ATP - Regulation(EU)2016/1179of19July2016
10th ATP - Regulation(EU)2017/776of4May2017
HP14 amendment - Regulation(EU)2017/997of8June2017
13th ATP - Regulation(EU)2018/1480of4October2018
14th ATP - Regulation(EU)2020/217of4October2019
15th ATP - Regulation(EU)2020/1182of19May2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK:2020No.1567of16thDecember2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version1.1of09June2021