Foundation House
St.John's Road
Meadowfield Industrial Estate
Durham
DH7 8TZ

Gary Pick
Partner Construction Ltd
Durhamgate Suite 1
Green Lane
Spennymoor
DL16 6FY

Our ref.: D9566A/02
Date: 14th August 2020

Dear Gary,

RE: TESTING OF TOPSOIL - TUXFORD

1.0 Introduction

Dunelm Geotechnical & Environmental Ltd (Dunelm) were instructed by Partner Construction Ltd to undertake sampling and testing of site-won topsoil at a greenfield site termed Tuxford, in Nottinghamshire in order to confirm the suitability of the material for exportation and re-use at their Nanny Marr Road site in Darfield. The Darfield site is currently being redeveloped with 41No. low-rise residential properties with associated gardens, estate access road and car parking.

2.0 Previous Works at Nanny Marr Road, Darfield (receiving site)

Dunelm have previously issued the following reports in relation to the site at Nanny Marr Road, Darfield:

- *Geoenvironmental Appraisal for land at Nanny Marr Road, Darfield – Phase 2. Report. Reference D8947, dated September 2018.*
- *Remediation Strategy for land at Nanny Marr Road, Darfield – Phase 2. Reference D8947/01, dated September 2018.*
- *Supplementary Investigation – Phase 2 Nanny Marr Road, Darfield. Reference D9566/01 rev. B, dated July 2019.*
- *Asbestos Validation Works – Nanny Marr Road, Darfield. Reference D9566/02, dated March 2020*

The Geoenvironmental Appraisal identified significantly elevated concentrations of polycyclic aromatic hydrocarbons (PAHs) and asbestos to be present in the shallow made ground on the Darfield site The results of the supplementary testing from around a previously identified hotspot of asbestos in HDTP 01 proved no asbestos to be present in the samples at 5m and 10m distance. Localised remediation works with regard to the asbestos contamination have been undertaken and reported separately.

However, the results of the supplementary testing from around two previously identified hotspots of PAHs in SA 2 and TP 13 have been compared to Generic Assessment Criteria (GAC) values for a "Residential with Plant Uptake" end use and indicate significantly elevated concentrations of PAHs to be present in seven of the twelve supplementary samples tested.

It is recommended that where the PAH impacted made ground is present, a clean cover layer of 600mm thickness should be placed in order to break pathways between the identified PAH contamination and

future site users i.e. residents. The clean cover layer will only be required in the rear garden areas to Plots 5 to 14.
In addition, in garden and soft landscaping areas where made ground is present at formation level a texturally suitable layer (nominal thickness of 300mm) should be placed.

3.0 Use of Imported Topsoil

Partner Construction Ltd intend to import approximately 800m^3 of topsoil to Nanny Marr Road from their greenfield site at Ashvale Road in Tuxford, Newark, N22 0QB as shown on Eastwood and Partners Drawing No. 44293/001 RevA attached to this letter.

An engineer from Dunelm attended the Tuxford site on 30th July 2020 and collected four samples of topsoil (refs. Area 1 to 4 Stockpile) in accordance with the procedure detailed in Appendix B of the Dunelm Remediation Strategy and in accordance with YALPAG Guidance.

The topsoil stockpile at the greenfield Tuxford site was formed as part of preparatory works for a proposed residential development scheme. The topsoil sampled from the stockpile at Tuxford comprised brown slightly gravelly, sandy clay.

The four topsoil samples from Tuxford were sent to Derwentside Environmental Testing Services Ltd (DETS), a UKAS and MCERTS accredited laboratory, for testing under subcontract for the following suite of determinands:

- *pH, metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium and zinc), soil organic matter, water-soluble sulphate, polycyclic aromatic hydrocarbons (PAHs), and asbestos.*

The results of the testing (DETS 20-14180 and 20-14702) on four samples of topsoil at Tuxford have been compared to Generic Assessment Criteria for Human Health for a “Residential with Plant Uptake” end use as detailed in Appendix B of the Remediation Strategy for the Nanny Marr Road site in Darfield, and confirm the topsoil from Tuxford to be suitable for exportation and re-use in proposed garden areas at the Nanny Marr Road site in Darfield, as summarized overleaf:

SUMMARY OF RESULTS FOR INORGANIC DETERMINANDS – TOPSOIL

Contaminant	Units	No. of samples tested	No. of samples exceeding GAC	Generic Assessment Criteria	Max concentration
Arsenic	mg/kg	4	0	37	8.2
Cadmium	mg/kg	4	0	11	0.3
Chromium (Total)	mg/kg	4	0	910	40
Chromium VI	mg/kg	4	0	6	<1
Lead*	mg/kg	4	0	200	61
Mercury	mg/kg	4	0	40	0.11
Nickel	mg/kg	4	0	130	26
Selenium	mg/kg	4	0	250	0.7
Copper	mg/kg	4	0	2400	130
Zinc	mg/kg	4	0	3700	83
Asbestos	-	4	0	Present	NAD

Soil Screening Values from The LQM/CIEH S4ULs for Human Health Risk Assessment (2015) for a residential with plant uptake end use. *Taken from DEFRA C4SL database.

The results of inorganic testing, including for asbestos, on four samples of the topsoil from Tuxford proved no exceedances when compared to assessment values for a “Residential with Plant Uptake” end use.

SUMMARY OF RESULTS FOR PAHs – TOPSOIL

Contaminant	Generic Assessment Criteria (mg/kg)	No. of samples tested	No. of samples with value greater than GAC	Max concentration (mg/kg)
	Residential with plant uptake			
Acenaphthene	210	4	0	<0.1
Acenaphthylene	170	4	0	0.4
Anthracene	2400	4	0	0.3
Benzo(a)anthracene	7.2	4	0	0.6
Benzo(a)pyrene	2.2	4	0	0.3
Benzo(b)fluoranthene	2.6	4	0	0.2
Benzo(g,h,i)perylene	320	4	0	0.2
Benzo(k)fluoranthene	77	4	0	0.2
Chrysene	15	4	0	0.8
Dibenz(a,h)anthracene	0.24	4	0	<0.1
Fluoranthene	280	4	0	0.5
Fluorene	170	4	0	0.2
Indeno(1,2,3,-cd)pyrene	27	4	0	0.3
Naphthalene	2.3	4	0	<0.1
Phenanthrene	95	4	0	0.3
Pyrene	620	4	0	0.8

Soil Screening Values from The LQM/CIEH S4ULs for Human Health Risk Assessment (2015) for a residential with plant uptake end use for a 1% SOM soil.

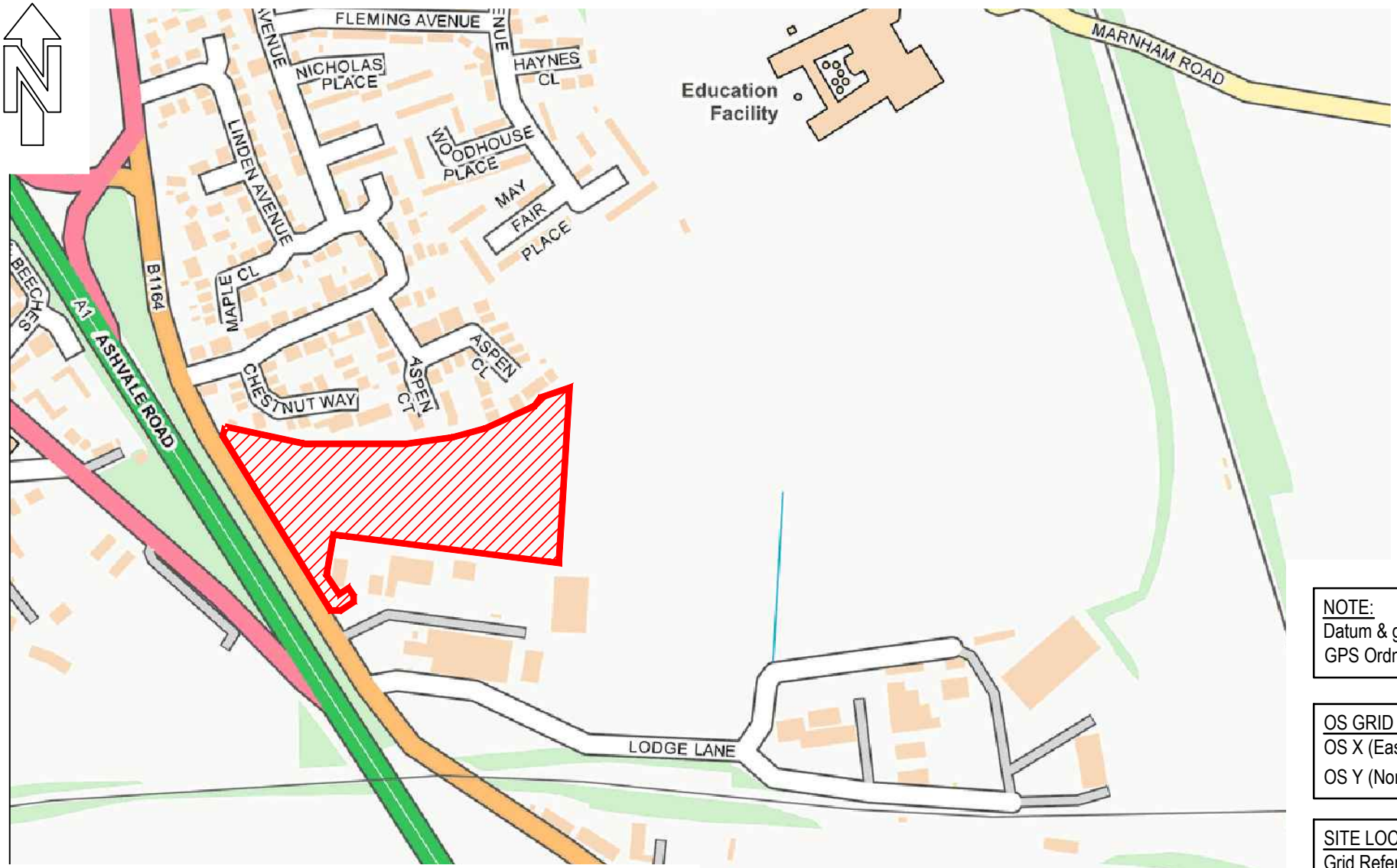
The results of PAH testing on four samples of the topsoil from Tuxford proved no exceedances when compared to assessment values for a “Residential with Plant Uptake” end use.

We trust the above is suitable for your requirements, however, should you require any further information then please do not hesitate to contact the undersigned.

Yours sincerely,

Sarah Grieves
For and on behalf of Dunelm Geotechnical and Environmental Ltd.

Enclosed: Tuxford Site Location Plan Drawing No. 44293/001 Rev A
DETS laboratory certificates 20-14180 and 20-14702



NOTE:
Datum & grid relate to GPS Ordnance Survey.

OS GRID COORDINATES:
OS X (Eastings) - 474241
OS Y (Northings) - 370707

SITE LOCATION:
Grid Reference - SK74241 70707
Post Code - NG22 0QB

A	First Issue.				

Eastwood & Partners
CONSULTING ENGINEERS
St. Andrew's House
23 Kingfield Road
Sheffield
S11 9AS
Tel 0114 255 4554
Fax 0114 255 4330
E&P

PARTNER CONSTRUCTION
ASHVALE ROAD, TUXFORD
SITE LOCATION PLAN

CHECKED	SCALE AT A4	DRAWING STATUS	
CH	1:50000 Approx	PRELIMINARY	
DRAWN	DATE	DRAWING NUMBER	REV
RH	23.09.19	44293 / 001	A

Certificate of Analysis

Certificate Number	20-14180	06-Aug-20
Client	Dunelm Geotechnical & Environmental Ltd Foundation House St. John's Road Meadowfield Durham DH7 8TZ	
Our Reference	20-14180	
Client Reference	D9566	
Order No	21347SGD9566	
Contract Title	Nanny Marr Road	
Description	3 Soil samples.	
Date Received	03-Aug-20	
Date Started	03-Aug-20	
Date Completed	06-Aug-20	
Test Procedures	Identified by prefix DETSn (details on request).	
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.	

Approved By

Adam Fenwick
Contracts Manager

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Summary of Chemical Analysis
Matrix Descriptions

Our Ref 20-14180
Client Ref D9566
Contract Title Nanny Marr Road

Sample ID	Lab No	Completed	Matrix Description
Area 1 Stockpile	1706886	06/08/2020	Dark brown gravelly, very sandy CLAY
Area 2 Stockpile	1706887	06/08/2020	Dark brown gravelly, very sandy CLAY
Area 3 Stockpile	1706888	06/08/2020	Dark brown gravelly, very sandy CLAY

Summary of Chemical Analysis
Soil Samples

Our Ref 20-14180
Client Ref D9566
Contract Title Nanny Marr Road

			Lab No	1706886	1706887	1706888
				Area 1	Area 2	Area 3
			Sample ID	Stockpile	Stockpile	Stockpile
			Depth			
			Other ID			
			Sample Type	SOIL	SOIL	SOIL
			Sampling Date	30/07/2020	30/07/2020	30/07/2020
			Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	8.1	8.2	7.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.2
Chromium	DETSC 2301#	0.15	mg/kg	26	28	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	59	69	130
Lead	DETSC 2301#	0.3	mg/kg	53	61	44
Mercury	DETSC 2325#	0.05	mg/kg	0.16	0.14	0.14
Nickel	DETSC 2301#	1	mg/kg	23	26	22
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	83	77	75
Inorganics						
pH	DETSC 2008#		pH	9.7	7.7	7.7
Organic matter	DETSC 2002#	0.1	%	3.7	3.9	1.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	130	33	20
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	0.2	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	0.3	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.4	0.4	0.5
Pyrene	DETSC 3301	0.1	mg/kg	0.4	0.6	0.8
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	0.6
Chrysene	DETSC 3301	0.1	mg/kg	0.7	< 0.1	0.8
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH Total	DETSC 3301	1.6	mg/kg	2.7	< 1.6	2.8

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 20-14180
Client Ref D9566
Contract Title Nanny Marr Road

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1706886	Area 1 Stockpile	SOIL	NAD	none	Joanne Luscombe
1706887	Area 2 Stockpile	SOIL	NAD	none	Joanne Luscombe
1706888	Area 3 Stockpile	SOIL	NAD	none	Joanne Luscombe

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-14180
Client Ref D9566
Contract Nanny Marr Road

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1706886	Area 1 Stockpile SOIL	30/07/20	GJ 250ml, GJ 60ml, PT 1L		
1706887	Area 2 Stockpile SOIL	30/07/20	GJ 250ml, GJ 60ml, PT 1L		
1706888	Area 3 Stockpile SOIL	30/07/20	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Certificate of Analysis

Certificate Number	20-14702	14-Aug-20
Client	Dunelm Geotechnical & Environmental Ltd Foundation House St. John's Road Meadowfield Durham DH7 8TZ	
Our Reference	20-14702	
Client Reference	D9566	
Order No	21347/SG/D9566	
Contract Title	Nanny Marr Road	
Description	One Soil sample.	
Date Received	10-Aug-20	
Date Started	10-Aug-20	
Date Completed	14-Aug-20	
Test Procedures	Identified by prefix DETSn (details on request).	
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.	

Approved By

Adam Fenwick
Contracts Manager

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Summary of Chemical Analysis
Matrix Descriptions

Our Ref 20-14702
Client Ref D9566
Contract Title Nanny Marr Road

Sample ID	Lab No	Completed	Matrix Description
Area 4 Stockpile	1709877	14/08/2020	Dark brown gravelly, clayey SAND

Summary of Chemical Analysis
Soil Samples

Our Ref 20-14702
Client Ref D9566
Contract Title Nanny Marr Road

Lab No	1709877
	Area 4
Sample ID	Stockpile
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	30/07/2020
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	7.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.2
Chromium	DETSC 2301#	0.15	mg/kg	40
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	65
Lead	DETSC 2301#	0.3	mg/kg	43
Mercury	DETSC 2325#	0.05	mg/kg	0.11
Nickel	DETSC 2301#	1	mg/kg	23
Selenium	DETSC 2301#	0.5	mg/kg	0.7
Zinc	DETSC 2301#	1	mg/kg	68
Inorganics				
pH	DETSC 2008#		pH	9.0
Organic matter	DETSC 2002#	0.1	%	2.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	58
PAHs				
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	0.4
Pyrene	DETSC 3301	0.1	mg/kg	0.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.2
Chrysene	DETSC 3301	0.1	mg/kg	0.2
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.2
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.2
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.3
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.3
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.2
PAH Total	DETSC 3301	1.6	mg/kg	2.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Asbestos Analysis
Soil Samples

Our Ref 20-14702
Client Ref D9566
Contract Title Nanny Marr Road

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1709877	Area 4 Stockpile	SOIL	NAD	none	Colin Patrick

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-14702
Client Ref D9566
Contract Nanny Marr Road

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1709877	Area 4 Stockpile SOIL	30/07/20	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

End of Report