



MATERIAL/SUPPLIER ACCEPTANCE – PART 1																							
Prepared By: [REDACTED]		Date: 30-07-13																					
Work Instruction No. & Description: QEOP Legacy Transformation																							
Contractor Reference: LC401-LPR-APK-L-MAR-0028 Rev C01		Employer Reference: NA																					
To: The Project Manager : [REDACTED]																							
<p>Dear Sirs,</p> <p>We hereby request your acceptance of the following material.</p> <p>Section of Works: Landscaping & Earthworks</p> <p>Spec. Clause No./Drawing No. Reference: SHW series 600 (6/8-16)</p> <p>Details of Request:</p> <p>Allotment topsoil</p> <p>Supplier Information: Attached sampling report.</p> <table border="1"><tr><td>Supplier Name:</td><td>Freeland</td><td>Supplier Contact:</td><td>[REDACTED] Sales Manager</td></tr><tr><td>Supplier Address:</td><td>Freeland Horticulture Limited Rosedale Nursery, College Road, Hextable, Kent BR8 7LT</td><td>Supplier Telephone:</td><td>[REDACTED]</td></tr><tr><td></td><td></td><td>Supplier e-mail:</td><td>[REDACTED]@freelandhorticulture.co.uk</td></tr><tr><td>QA Certified:</td><td></td><td>Sample Provided?</td><td></td></tr></table> <p>Source, if applicable:</p> <p>Other Enclosures:</p> <table border="1"><tr><td></td><td>Date:</td><td colspan="2">30-07-13</td></tr></table> <p>Distribution: Project Manager (Original), Employer, Supervisor, Day File</p>				Supplier Name:	Freeland	Supplier Contact:	[REDACTED] Sales Manager	Supplier Address:	Freeland Horticulture Limited Rosedale Nursery, College Road, Hextable, Kent BR8 7LT	Supplier Telephone:	[REDACTED]			Supplier e-mail:	[REDACTED]@freelandhorticulture.co.uk	QA Certified:		Sample Provided?			Date:	30-07-13	
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QA Certified:		Sample Provided?																					
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MATERIAL/SUPPLIER ACCEPTANCE – PART 2																							
Prepared By: [...insert...] (for the PM)		Date: (dd/mm/yy)	PM Reference: [...insert...]																				
<p>Dear Sirs,</p> <p>THE ABOVE MATERIAL/SUPPLIER IS APPROVED FOR USE IN THE LOCATIONS STATED * THE</p> <p>ABOVE MATERIAL/SUPPLIER IS NOT APPROVED FOR USE IN THE LOCATIONS STATED FOR THE FOLLOWING REASON(S) *:</p> <p>[details - attach detail if insufficient space here]</p>																							
Authorised By: [...insert...] (Project Manager)		Date: (dd/mm/yyyy)																					
Distribution: Contractor (Original), Employer, Supervisor, Day File																							



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

BAM Nuttall Ltd
South Plaza
Marshgate Lane
Off Pudding Mill Lane
Stratford
London E15 2NH

11th February 2013

Our Ref: TOHA/13/3820/5/CS
Your Ref: as below

Dear Sirs

Queen Elizabeth Olympic Park Legacy Transformation

Imported Soil Analysis – Allotment Topsoil

Source: Freeland Horticulture, Bat & Ball

We have completed the analysis of the *Allotment Topsoil* sample, referenced *AT1*, collected for the Queen Elizabeth Olympic Park Legacy Transformation project and have pleasure reporting the findings.

Introduction

The purpose of this analysis was to determine the compliance of the sample with the requirements of *Appendix 6/8-16 – Allotment Topsoil* of the project specification, *Queen Elizabeth Olympic Park Legacy Transformation – Olympic Park Infrastructure Specification Earthworks Appendix 6 – LC401-LCI-APK-C-SPE-0600 – Revision C01 – 16/11/2012*).

Sampling

The soil was examined and sampled at the Freeland Horticulture source at Bat & Ball Quarry, Sevenoaks on 31/01/2013 by Ceri Spears and Joanna Uglow of Tim O'Hare Associates LLP. A representative composite soil sample was collected in accordance with *Clause 2 (Soil Sampling)* of *Appendix 6/8-16*.

At the time of our visit, the soil was stored in a single stockpile.

We understand that this soil is a manufactured topsoil containing a blend of quarry overburden material and green waste compost (BSI PAS100:2011 certified).

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Plate 1: Allotment Topsoil Stockpile



Plate 2: Allotment Topsoil

Laboratory Analysis

The sample was submitted to the laboratory for a range of physical and chemical analyses in accordance with *Clause 3 (Soil Testing)* within *Appendix 6/8-16* of the specification. The following parameters were determined:

- Visual examination to record Munsell colour, moisture status, aerobic state, the presence of any deleterious materials, unusual odours (e.g. petroleum hydrocarbons);
- detailed particle size analysis;
- stone content (>2mm, >20mm, >50mm);
- visible contaminants (>2mm) (of which glass/sharps or plastic);
- pH value;
- calcium carbonate;
- electrical conductivity values (water and CaSO_4 extracts);
- exchangeable sodium percentage;
- organic matter content;
- total nitrogen;
- carbon:nitrogen ratio;
- extractable phosphorus, potassium and magnesium;
- phytotoxic heavy metals (Cu, Ni, Zn, B);
- total and water soluble sulphate.

With reference to *Clause 5 (General Remediation Standards)* of *Appendix 6/8-16*, in addition to the requirements for phytotoxic metals and sulphate (listed above), the soil is to comply fully with all the chemical requirements of the baseline remediation specification, zone specific remediation specification, and site-specific remediation strategy and all other relevant documents detailed. In this instance, we understand that all contamination tests will be carried out by others as part of a separate testing package.

Results of Analysis

We have cross-referenced the results for the sample against *Clause 4 (Allotment Topsoil Specification)* within *Appendix 6/8-16* of the specification. The results of this process are presented on the attached Certificates of Analysis, and a summary of our findings is provided below.

Visual Examination

The stockpiled topsoil was consistent in visual appearance and was described as dark brown (Munsell Colour 10YR 3/2), slightly moist, friable sandy loam with a moderately developed fine to medium granular structure. The soil was virtually stone-free and contained frequent organic fines. No deleterious materials, unusual odours or evidence of anaerobism were recorded. No roots or rhizomes of pernicious weeds were observed.

Horticultural Parameters

The sample was almost fully compliant with the requirements of *Appendix 6/8-16, Clause 4* with the exception of the following parameters:

Parameter	Result	Specified Requirement
Sand Content (0.05 – 2.0mm)	72%	45 – 70%
Electrical Conductivity (calcium sulphate extract)	3050 $\mu\text{S}/\text{cm}$	<2800 $\mu\text{S}/\text{cm}$
Extractable Potassium	1525 mg/l	240 – 1200 mg/l

The non compliant sand content would be considered minor and insignificant in this instance, when reviewed in conjunction with all the other results and the proposed end-use of this soil.

The electrical conductivity value by calcium sulphate extract exceeded the maximum specified value. Further testing found the sample to possess a low Exchangeable Sodium Percentage (ESP) value, indicating a low sodium risk and compliance in this respect.

The non-compliant extractable potassium level would be considered minor in this instance, when reviewed in conjunction with all the other results. However, we recommend that the supplier is made aware of this so it can be addressed in further batches of this soil.

Phytotoxic Contaminants and Sulphate

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc, water-soluble boron), none was found at levels that exceeded the maximum permissible levels specified.

The levels of total sulphate and water soluble sulphate recorded fell below the maximum specified permissible values.

Visible Contaminants >2mm

No visible contaminants >2mm (of which plastics or sharps) were recorded.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully



BSc MSc MISOilSci
Soil Scientist



BSc MSc MISOilSci MBIAC CSci
Principal Consultant

For & on behalf of Tim O'Hare Associates LLP



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Client:	BAM Nuttall Ltd
Project:	Queen Elizabeth Olympic Park Legacy Transformation
Job:	Imported Soil Testing
Soil Type:	Appendix 6/8-16: Allotment Topsoil
Source:	Freeland Horticulture - Bat & Ball
Date:	February 2013
Job Ref No:	TOHA/13/3820/5/CS

Sample Reference		Accreditation	Specified Requirement
Clay (<0.002mm)	%	UKAS	10-25
Silt (0.002-0.05mm)	%	UKAS	10-40
Very Fine Sand (0.05-0.15mm)	%	UKAS	--
Fine Sand (0.15-0.25mm)	%	UKAS	≥ 35
Medium Sand (0.25-0.50mm)	%	UKAS	
Coarse Sand (0.50-1.0mm)	%	UKAS	--
Very Coarse Sand (1.0-2.0mm)	%	UKAS	--
Total Sand (0.05-2.0mm)	%	UKAS	45-70
Texture Class (UK Classification)	--	UKAS	--
Stones (>2mm)	% DW	GLP	0-20
Stones (>20mm)	% DW	GLP	0
Stones (>50mm)	% DW	GLP	0

pH Value (1:2.5 water extract)	units	UKAS	5.5-8.5
Calcium Carbonate	%	UKAS	<10
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS	<1500
Electrical Conductivity (1:2 CaSO4 extract)	uS/cm	UKAS	<2800
Exchangeable Sodium Percentage	%	UKAS	<15

Organic Matter (WB)	%	UKAS	3.0-15.0
Total Nitrogen (Dumas)	%	UKAS	≥ 0.20
C : N Ratio	ratio	UKAS	<20:1
Extractable Phosphorus	mg/l	UKAS	26-100
Extractable Potassium	mg/l	UKAS	240-1200
Extractable Magnesium	mg/l	UKAS	80-600

Water Soluble Boron (B)	mg/kg	MCERTS	<3
Total Copper (Cu)	mg/kg	MCERTS	<200#
Total Nickel (Ni)	mg/kg	MCERTS	<110#
Total Zinc (Zn)	mg/kg	MCERTS	<300#
Total Sulphate	mg/kg	MCERTS	<2000
Water Soluble Sulphate (SO4)	g/l	MCERTS	<1.2

Visible Contaminants >2mm	%	UKAS	<0.5
Plastics >2mm	%	UKAS	<0.25
Sharps >2mm	%	UKAS	0

S	Sand Texture Class
✓	Compliant with Appendix 6/8-16 Allotments Topsoil Specification
X	Fails Appendix 6/8-16 Allotments Topsoil Specification
*	See report comments
#	Specified criterion is pH dependent

Visual Examination

The stockpiled soil was consistent in appearance and was described as a dark brown, slightly moist, friable SANDY LOAM with a moderately developed fine to medium granular structure. The soil was virtually stone-free and contained frequent woody fibres and organic fines. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

Horticultural parameters analysis carried out by Natural Resource Management Ltd - UKAS No. 2334
Heavy metals and sulphate analysis carried out by IZ Analytical Ltd. UKAS - No. 4041

AT1	
14	✓
14	✓
5	--
12	✓
42	✓
10	--
3	--
72	X
SL	--
1	✓
0	✓
0	✓

8.3	✓
0.9	✓
1410	✓
3050	*
5	✓

5.1	✓
0.31	✓
10	✓
78	✓
1525	X
188	✓

1.6	✓
17	✓
21	✓
69	✓
360	✓
0.33	✓

0	✓
0	✓
0	✓

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