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Next Generation Engineering Consultancy Services

24th July 2013

Simon Devine
Taylor Wimpey Manchester Limited
George Wimpey House
1 Lumsdale Road
Stretford
Manchester
M32 0UT

Dear Simon

**RE: NX131 PLOT 20 VALIDATION REPORT – ENGPJ/196311 CALDERSTONES PARK
PHASE 3 OFF PENDLE DRIVE CLITHEROE BB7 9**

Validation testing within the rear garden of Plots 20 was undertaken on 24th July 2013 by an engineer from NX Consulting Limited. We confirm that a 600mm cover system was present comprising up to 250mm of topsoil, validated by WSP Group on behalf of John Reilly Construction, overlying 400mm+ of subsoils.

The contractor confirmed that materials used are those sourced from Harbour Lane, Warton. A copy of the WSP Validation letter is appended to this document.

Subsoils comprise 'site won' cohesive soils validated as suitable for use by NX Consulting, as bulk upfill within garden areas.

To date NX Consulting have conducted 2no validation tests of the cover system soils and the Warton topsoil, within Plot 1 & 8 in line with the agreed remediation strategy with Ribble Valley Council. We can confirm that all concentrations fall below remedial target values agreed with the NHBC and Urban Vision.

We can therefore, confirm that plot 20 has been completed in line with the agreed remediation methodology agreed with Ribble Valley Council and the NHBC and plot 20 is considered suitable for occupation.

Please do not hesitate to call if you have any queries.

Yours sincerely
for and on behalf of NX Consulting Limited

A handwritten signature in blue ink, appearing to read 'Mark Newton', written over a light blue rectangular background.

Mark Newton
(Managing Director)

21 September 2012

Dave Spruce
John Reilly Civil Engineering Ltd
Millennium House
Euxton Lane
Euxton, Chorley
Lancashire,
PR7 6AE

Dear Dave,

**Harbour Lane, Warton
Topsoil Stockpile**

WSP Environmental Limited (WSPE) attended the Harbour Lane, Warton site on 13 September 2012 at the request of John Reilly Civil Engineering Ltd., to sample a topsoil stockpile with an approximate volume of 2,000m³. The sampling consisted of eight samples obtained from random depths and locations within the stockpile to achieve a testing frequency 1 sample per 250m³. The samples were submitted to a laboratory for a standard suite of analysis to demonstrate that the topsoil is suitable for use as imported topsoil to residential gardens.

The topsoil is derived from the Harbour Lane site and was observed during our site visit to be dark brown organic topsoil.

The test results are attached as Appendix A to this letter and all determinands are within typical residential importation screening values. As a result, WSPE recommend that the Harbour Lane topsoil is generally suitable for use as topsoil at residential developments, subject to checking with site specific criteria for the acceptance of imported topsoil.

We trust that this letter and its attachments are suitable for use as supporting evidence of the quality of the topsoil.

Yours sincerely

Andrew Moore
Associate Director
DDI: 0161 886 2548

Appendix A Chemical Analysis Results

WSP Environmental UK

The Victoria
150-182 The Quays
Salford
Manchester
M50 3SP
Tel: +44 (0)161 886 2400
Fax: +44 (0)16 1886 2402
<http://www.wspgroup.com>
Reg. No: 1152332

WSP Group plc
Offices worldwide

APPENDIX A
CHEMICAL ANALYSIS RESULTS



WSP Environmental
The Victoria
150-182 The Quays
Salford
Manchester
Lancashire
M50 3SP
Attention : Andrew Moore

CERTIFICATE OF ANALYSIS

Date:	20/09/2012 16:56		
Customer:	H_WSP_MAN		
Sample Delivery Group (SDG):	120914-48	Report No.:	195032
Your Reference:	34419		
Location:	Harbour Lane, Warton		

We received 8 samples on Thursday September 13, 2012 and 8 of these samples were scheduled for analysis which was then completed on Thursday September 20, 2012. Accredited laboratory tests are defined in the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with data sections alone.

All chemical testing (unless subcontracting) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager



SOLID

Component	LOD		Customer Sample Ref.	TP1	TP1	TP2	TP2	TP3	TP3	TP4	TP4	
			Depth (m)	0.2	1.2	0.2	1.2	0.3	1.2	0.2	1.8	
			Sample Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	
			Date Sampled	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	
			Date Received	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	
			SDG Ref	120914-48	120914-48	120914-48	120914-48	120914-48	120914-48	120914-48	120914-48	
			Lab Sample No.(s)	6183994	6183997	6183998	6183999	6184001	6184002	6184003	6184005	
			AGS Reference	ES	ES	ES	ES	ES	ES	ES	ES	
			Units	Method								

MISC

pH	1	pH Units M	TM133	6.66	7.01	6.56	6.85	6.93	7.29	8.06	6.57
Arsenic	<0.6	mg/kg M	TM181	8.34	8.92	9.4	11.2	7.72	6.88	8.11	8.24
Cadmium	<0.02	mg/kg M	TM181	0.135	0.145	0.14	0.136	0.119	0.11	0.149	0.0956
Chromium	<0.9	mg/kg M	TM181	31.1	30.8	32.9	30.8	29.8	26.6	25.7	28.2
Copper	<1.4	mg/kg M	TM181	16.8	15.1	16	15.4	13.5	10.2	14.8	15.6
Lead	<0.7	mg/kg M	TM181	73.3	41.4	35.6	42.2	31.8	25.4	33.8	29.5
Mercury	<0.14	mg/kg M	TM181	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Nickel	<0.2	mg/kg M	TM181	17.5	16.8	19.2	17.3	17.7	14.9	16.8	17.2
Selenium	<1	mg/kg *	TM181	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	<1.9	mg/kg M	TM181	74.9	60.2	53.7	75.7	46.3	37	70.4	51.6
Water Soluble Sulphate as SO4 2:1 Extract	<0.008	g/l M	TM243	0.0086	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Soil Organic Matter (SOM)	<0.35	% *	TM132		3.81						

PAH by GCMS

Naphthalene-d8 % recovery**		%	TM218	102	96.5	107	98.9	115	111	93.7	98.2
Acenaphthene-d10 % recovery**		%	TM218	102	97.2	108	98.6	114	110	93.9	99.5
Phenanthrene-d10 % recovery**		%	TM218	101	96.6	104	96.9	112	108	93.8	99.2
Chrysene-d12 % recovery**		%	TM218	94.7	83.3	95.6	88.5	102	101	82.4	86.5
Perylene-d12 % recovery**		%	TM218	102	87	90.8	93.9	108	110	87.3	92.2
Naphthalene	<0.009	mg/kg M	TM218	0.0288	0.0281	0.341	0.0231	0.0335	0.0286	0.0368	0.0161
Acenaphthylene	<0.012	mg/kg M	TM218	<0.012	0.018	0.018	<0.012	<0.012	<0.012	0.0274	<0.012
Acenaphthene	<0.008	mg/kg M	TM218	<0.008	0.0167	0.0118	<0.008	0.0198	<0.008	0.058	0.0243
Fluorene	<0.01	mg/kg M	TM218	<0.01	0.015	0.034	<0.01	0.0308	<0.01	0.0397	0.0238
Phenanthrene	<0.015	mg/kg M	TM218	0.103	0.0907	1.96	0.0608	0.155	0.0829	0.431	0.0955
Anthracene	<0.016	mg/kg M	TM218	0.028	<0.016	0.0626	<0.016	0.138	<0.016	0.148	0.0271
Fluoranthene	<0.017	mg/kg M	TM218	0.236	0.124	0.447	0.16	0.172	0.168	1.07	0.11
Pyrene	<0.015	mg/kg M	TM218	0.203	0.1	0.376	0.147	0.14	0.146	0.993	0.0998
Benz(a)anthracene	<0.014	mg/kg M	TM218	0.114	0.0566	0.411	0.1	0.0778	0.107	0.473	0.0737
Chrysene	<0.01	mg/kg M	TM218	0.125	0.0527	1.07	0.101	0.0822	0.105	0.486	0.0612
Benzo(b)fluoranthene	<0.015	mg/kg M	TM218	0.214	0.0828	0.915	0.162	0.115	0.187	0.727	0.109
Benzo(k)fluoranthene	<0.014	mg/kg M	TM218	0.0728	0.0246	0.259	0.0641	0.0492	0.0723	0.271	0.0406
Benzo(a)pyrene	<0.015	mg/kg M	TM218	0.173	0.0564	0.429	0.139	0.0827	0.143	0.598	0.0814
Indeno(1,2,3-cd)pyrene	<0.018	mg/kg M	TM218	0.114	0.039	0.324	0.083	0.0535	0.0878	0.356	0.0552
Dibenzo(a,h)anthracene	<0.023	mg/kg M	TM218	0.0315	<0.023	0.225	<0.023	<0.023	<0.023	0.1	<0.023
Benzo(g,h,i)perylene	<0.024	mg/kg M	TM218	0.152	0.0515	0.393	0.108	0.0724	0.111	0.439	0.0666
PAH, Total Detected USEPA 16	<0.118	mg/kg	TM218	1.59	0.738	7.28	1.15	1.22	1.24	6.25	0.885

TPH CWG (S)

GRO Surrogate % recovery**		%	TM089	85	79	83	92	82	80	83	103
GRO >C5-C12	<0.044	mg/kg	TM089	<0.044	0.571	<0.044	0.252	<0.044	0.278	<0.044	0.107
Methyl tertiary butyl ether (MTBE)	<0.005	mg/kg *	TM089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aliphatics >C5-C6	<0.01	mg/kg	TM089	<0.01	0.0161	<0.01	0.0161	<0.01	0.0144	<0.01	<0.01
Aliphatics >C6-C8	<0.01	mg/kg	TM089	<0.01	0.0335	<0.01	0.0268	<0.01	0.0249	<0.01	<0.01
Aliphatics >C8-C10	<0.01	mg/kg	TM089	<0.01	0.138	<0.01	0.0389	<0.01	0.0511	<0.01	<0.01
Aliphatics >C10-C12	<0.01	mg/kg	TM089	<0.01	0.141	<0.01	0.0402	<0.01	0.055	<0.01	<0.01
Aliphatics >C12-C16	<0.1	mg/kg	TM173	3.3	8.27	<0.1	8.51	6.5	6.69	9.6	8.15
Aliphatics >C16-C21	<0.1	mg/kg	TM173	4.53	4.92	<0.1	5.75	3.08	3.68	8.15	3.52
Aliphatics >C21-C35	<0.1	mg/kg	TM173	16.2	12.6	7.78	11.8	10.6	11.8	35	13.7
Aliphatics >C35-C44	<0.1	mg/kg	TM173	3.79	<0.1	<0.1	<0.1	<0.1	1.63	15.9	<0.1
Total Aliphatics >C12-C44	<0.1	mg/kg	TM173	27.8	25.8	7.78	26.1	20.1	23.8	68.6	25.3
Aromatics >EC5-EC7	<0.01	mg/kg	TM089	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatics >EC7-EC8	<0.01	mg/kg	TM089	<0.01	0.0563	<0.01	0.0657	<0.01	0.038	<0.01	0.0862
Aromatics >EC8-EC10	<0.01	mg/kg	TM089	<0.01	0.0938	<0.01	0.0348	<0.01	0.0563	<0.01	<0.01
Aromatics >EC10-EC12	<0.01	mg/kg	TM089	<0.01	0.0938	<0.01	0.0268	<0.01	0.0367	<0.01	<0.01
Aromatics >EC12-EC16	<0.1	mg/kg	TM173	22.5	16.7	1.75	15.7	14.2	12	15.7	14.8
Aromatics >EC16-EC21	<0.1	mg/kg	TM173	7.43	7.38	3.39	6.05	4.89	4.11	15.8	5.52
Aromatics >EC21-EC35	<0.1	mg/kg	TM173	45.6	42.9	34.6	35.9	35.8	28.4	88.8	50.7
Aromatics >EC35-EC44	<0.1	mg/kg	TM173	17.7	18.2	15.1	14.9	12.4	8	53	17.4
Aromatics >EC40-EC44	<0.1	mg/kg	TM173	6.66	6.12	6.66	5.15	5.2	2.57	23.1	5.81

SOLID

			Customer Sample Ref.	TP1	TP1	TP2	TP2	TP3	TP3	TP4	TP4
			Depth (m)	0.2	1.2	0.2	1.2	0.3	1.2	0.2	1.8
			Sample Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
			Date Sampled	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012
			Date Received	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15	13/09/2012 14:15
			SDG Ref	120914-48	120914-48	120914-48	120914-48	120914-48	120914-48	120914-48	120914-48
			Lab Sample No.(s)	6183994	6183997	6183998	6183999	6184001	6184002	6184003	6184005
			AGS Reference	ES	ES	ES	ES	ES	ES	ES	ES
Component	LOD	Units	Method								
Total Aromatics >EC12-EC44	<0.1	mg/kg	TM173	93.3	85.2	54.8	72.6	67.3	52.5	173	88.4
Total Aliphatics >C5-35	<0.1	mg/kg	TM173	24.1	26.1	7.78	26.2	20.1	22.3	52.8	25.4
Total Aromatics >C5-35	<0.1	mg/kg	TM173	75.6	67.2	39.7	57.8	54.9	44.6	120	71.1
Total Aliphatics & Aromatics >C5-35	<0.1	mg/kg	TM173	99.7	93.3	47.5	84	75.1	66.9	173	96.5
Total Aliphatics & Aromatics >C5-C44	<0.1	mg/kg	TM173	121	112	62.6	98.9	87.5	76.6	242	114
VOC MS (S)											
Benzene	<0.009	mg/kg M	TM116	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Toluene	<0.005	mg/kg M	TM116	<0.005	0.0621	<0.005	0.0241	<0.005	0.0677	<0.005	0.079
Ethylbenzene	<0.004	mg/kg M	TM116	<0.004	<0.004	<0.004	<0.004	<0.004	0.00601	<0.004	<0.004
p/m-Xylene	<0.014	mg/kg *	TM116	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
o-Xylene	<0.01	mg/kg M	TM116	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tert-amyl methyl ether	<0.015	mg/kg	TM116	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015



Plate 1 – Plot No 20



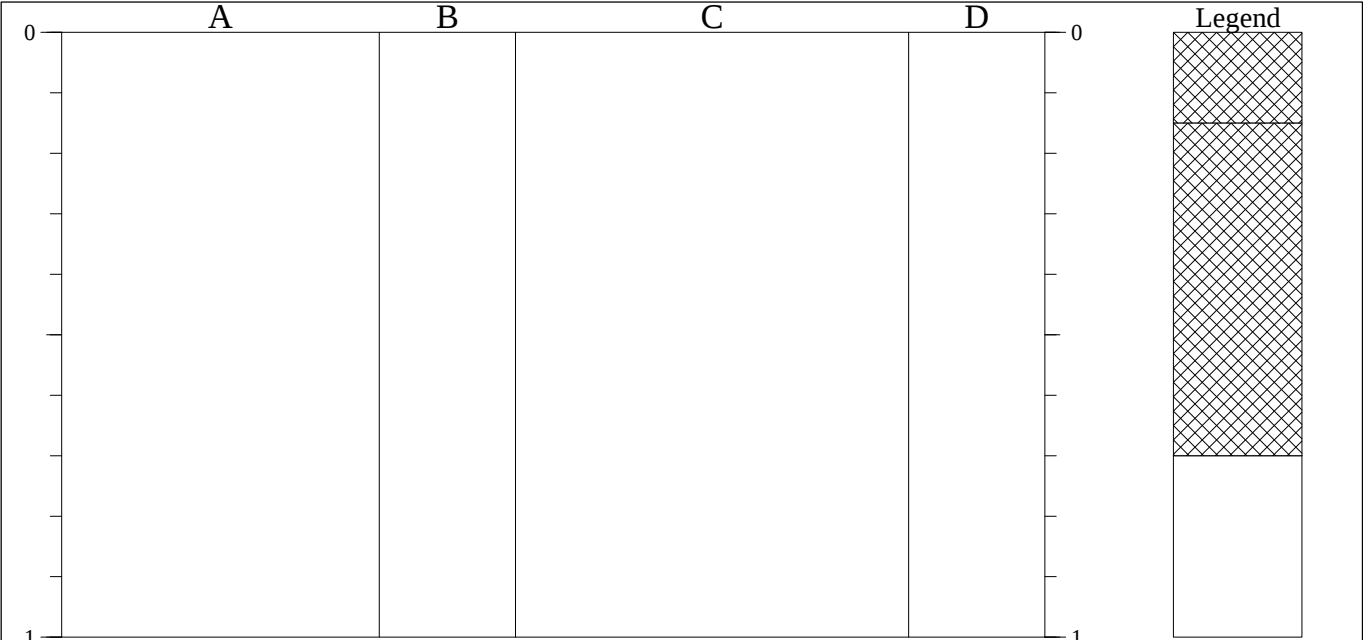
Plate 2 – Plot 20 Rear Garden



Plate 3 – Plot 20 Cover System Depth & Arisings

TRIAL PIT LOG

Project Calderstones Phase 3				TRIAL PIT No Plot 20
Job No NX131	Date 27-07-13	Ground Level (m)	Co-Ordinates ()	
Contractor Geoventures Limited				Sheet 1 of 1



STRATA				SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests	
0.00-0.15		Brown friable slightly organic clay with some fine to coarse brick, slate and cement gravel. Occasional rootlets (Imported WSP Validated Topsoil from Warton Site).				
0.15-0.70		Site Won Made Ground: Firm brown grey slightly organic clay with some fine to coarse angular gravel of brick, slate, sandstone, mudstone, concrete. Occasional brick cobbles.				
0.70		Trial pit ended at 0.70m.				

Shoring/Support: None Stability: Good				GENERAL REMARKS No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater recorded.

All dimensions in metres Scale 1:12.5	Client Taylor Wimpey Manchester Limited	Method/ Plant Used	Logged By MN
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limited company registered in England and
Wales (No 2514788) whose address is at
Hadfield House, Hadfield Street, Manchester M16 9FE

Scientific Analysis Laboratories Ltd

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 328258-1

Date of Report: 08-May-2013

Customer: NX Consulting Limited
Thorpe House
11 Thorpe Close
Altrincham
WA15 7WZ

Customer Contact: Mr Mark Newton

Customer Job Reference:

Customer Purchase Order: 210

Customer Site Reference: Calderstones, Whalley

Date Job Received at SAL: 01-May-2013

Date Analysis Started: 03-May-2013

Date Analysis Completed: 08-May-2013

The results reported relate to samples received in the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs
All results have been reviewed in accordance with QP22



Report checked
and authorised by :
Mr Ross Walker
Customer Services Manager
(Land)

Issued by :
Mr Ross Walker
Customer Services Manager
(Land)

Index to symbols used in 328258-1

Value	Description
M105	Analysis conducted on an "as received" aliquot. Results are reported on a dry weight basis where moisture content was determined by assisted drying of sample at 105C
AR	As Received
M40	Analysis conducted on sample assisted dried at no more than 40C. Results are reported on a dry weight basis.
N.D.	Not Detected
S	Analysis was subcontracted
M	Analysis is MCERTS accredited
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Method Index

Value	Description
T6	ICP/OES
T277	Grav (1 Dec) (40 C)
T27	PLM
T7	Probe
T207	GC/MS(MCERTS)
T2	Grav
T546	Colorimetry (CF)
T4	Colorimetry
T162	Grav (1 Dec) (105 C)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Asbestos ID	T27	AR			SU	001-004
Moisture	T277	AR	0.1	%	N	001-004
Moisture @ 105 C	T162	AR	0.1	%	N	001-004
Arsenic	T6	M40	2	mg/kg	M	001-004
Boron (water-soluble)	T6	AR	1	mg/kg	N	001-004
Cadmium	T6	M40	1	mg/kg	M	001-004
Chromium	T6	M40	1	mg/kg	M	001-004
Chromium VI	T6	AR	1	mg/kg	N	001-004
Copper	T6	M40	1	mg/kg	M	001-004
Lead	T6	M40	1	mg/kg	M	001-004
Mercury	T6	M40	1	mg/kg	M	001-004
Nickel	T6	M40	1	mg/kg	M	001-004
Selenium	T6	M40	3	mg/kg	M	001-004
Zinc	T6	M40	1	mg/kg	M	001-004
Cyanide(Total)	T546	AR	1	mg/kg	M	001-004
Cyanide(free)	T546	AR	1	mg/kg	M	001-004
pH	T7	AR			M	001-004
Phenols(Mono)	T546	AR	1	mg/kg	M	001-004
SO4(Total)	T6	M40	0.01	%	N	001-004
Sulphide	T4	AR	10	mg/kg	N	001-004
Sulphur(Free)	T2	M40	500	mg/kg	N	001-004
Thiocyanate	T4	AR	10	mg/kg	N	001-004
Naphthalene	T207	M105	0.1	mg/kg	M	001-004
Acenaphthylene	T207	M105	0.1	mg/kg	U	001-004
Acenaphthene	T207	M105	0.1	mg/kg	M	001-004
Fluorene	T207	M105	0.1	mg/kg	M	001-004
Phenanthrene	T207	M105	0.1	mg/kg	M	001-004
Anthracene	T207	M105	0.1	mg/kg	U	001-004
Fluoranthene	T207	M105	0.1	mg/kg	M	001-004
Pyrene	T207	M105	0.1	mg/kg	M	001-004
Benzo(a)Anthracene	T207	M105	0.1	mg/kg	M	001-004
Chrysene	T207	M105	0.1	mg/kg	M	001-004
Benzo(b/k)Fluoranthene	T207	M105	0.1	mg/kg	M	001-004
Benzo(a)Pyrene	T207	M105	0.1	mg/kg	M	001-004
Indeno(123-cd)Pyrene	T207	M105	0.1	mg/kg	M	001-004
Dibenzo(ah)Anthracene	T207	M105	0.1	mg/kg	M	001-004

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Benzo(ghi)Perylene	T207	M105	0.1	mg/kg	M	001-004
PAH(total)	T207	M105	0.1	mg/kg	U	001-004

