



**TIM O'HARE ASSOCIATES**  
SOIL & LANDSCAPE CONSULTANCY

Mr Andy Spetch  
British Sugar plc Co-Products  
Oundle Road  
Peterborough  
PE2 9QU

8<sup>th</sup> February 2007

Our Ref: TOHA/07/2254  
Your Ref: as below

Dear Mr Spetch

**RE: Topsoil Analysis Report : Wissington – Sports 10**

We have completed the analysis of the Sports 10 sample recently submitted and have pleasure reporting our findings.

The purpose of the analysis was to assess the suitability of the Sports 10 sample as a topsoil for sports pitch construction and as a top dressing for grass pitch repairs.

***SAMPLE EXAMINATION***

The soil was described as a brown, dry, friable SANDY LOAM with a moderately developed, fine to coarse granular structure. The sample was stone-free and no deleterious materials, roots or rhizomes of pernicious weeds were observed.

***ANALYTICAL SCHEDULE***

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the absence of potential contaminants. The following parameters were determined:

- particle size analysis and stone content;
- pH value;
- electrical conductivity values (CaSO<sub>4</sub> and water extracts);
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- heavy metals (As, Ba, Br, Cd, Cr, Cu, Pb, Hg, Ni, Se, V, Zn, B);
- soluble sulphate, elemental sulphur, acid volatile sulphide;
- total cyanide and total (mono) phenols;
- total petroleum hydrocarbons (C<sub>10</sub>-C<sub>40</sub>).
- speciated PAHs (US EPA16 suite)

---

Tim O'Hare Associates LLP  
Howbery Park Wallingford Oxfordshire OX10 8BA  
T:01491 822653 F:01491 822609 E:info@toha.co.uk  
www.toha.co.uk

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below. The interpretation considers the use of Sports 10 as a topsoil for sports pitch construction and as a top dressing for soil-based pitch maintenance and repairs. It is not the intention to use Sports 10 as a top dressing for sand rootzone pitches or pitches with sand slits.

## **RESULTS OF ANALYSIS**

### **Particle Size Analysis and Stone Content**

The sample fell into the *sandy loam* texture class. The sample is considered suitable for sports pitch construction and for the maintenance and repair of soil-based sports pitches. The particle size distribution is too broad for use as a *sand* top dressing on sand rootzone pitches or pitches with sand slits.

The sample did not contain any stones and, as such, stones will not affect the use of the soil on sports pitches.

### **pH and Electrical Conductivity Values**

The sample was alkaline in reaction (pH 7.4) with a pH value that would be suitable for sports pitch and amenity grass cultivars.

The electrical conductivity (salinity) values were low, indicating that soluble salts were not present at levels that would be harmful to grass.

### **Organic Matter and Fertility Status**

The sample was well supplied with organic matter and major plant nutrients.

### **Potential Contaminants**

Of the potential contaminants determined, none was found at levels that would indicate significant contamination.

## **CONCLUSION**

The purpose of the analysis was to assess the suitability of the Sports 10 sample as a topsoil for sports pitch construction and as a top dressing for grass pitch repairs. From the soil examination and laboratory analysis, the sample is described as an alkaline, non-saline sandy loam with an adequate structure and no stones. The fertility status was moderate to high and no potential contamination was found with respect to the parameters determined.

To conclude, based on our findings, the Sports 10 sample is considered suitable for sports pitch construction and for soil-based pitch maintenance and repairs, provided it is not used as a top dressing for sand rootzone pitches or pitches with sand slits.

---

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 sincerely

**Tim O'Hare**  
BSc MSc MSoilSci MBIAC CSci  
Principal Soil Consultant



Client:	<b>British Sugar plc Co-Products</b>
Client Ref:	<b>Wissington</b>
Date:	<b>February 2007</b>
Job Ref No:	<b>TOHA/07/2254</b>

<b>Sample Reference</b>
-------------------------

<b>Sports 10</b>
------------------

Clay (<0.002mm)	%	U	12	✓
Silt (0.002-0.05mm)	%	U	14	✓
Very Fine Sand (0.05-0.15mm)	%	U	27	✓
Fine Sand (0.15-0.25mm)	%	U	22	✓
Medium Sand (0.25-0.50mm)	%	U	22	✓
Coarse Sand (0.50-1.0mm)	%	U	2	✓
Very Coarse Sand (1.0-2.0mm)	%	U	1	✓
Stones (2-20mm)	% DW	G	0	✓
Stones (>20mm)	% DW	G	0	✓

pH Value (1:2.5 KCl extract)	units	G	7.4	✓
Electrical Conductivity (1:2.5 water extract)	uS/cm	U	862	✓
Electrical Conductivity (1:2 CaSO4 extract)	uS/cm	U	2640	✓
Moisture Content	%	G	18	✓
Organic Matter (WB)	%	U	4.2	✓
Total Nitrogen (Dumas)	%	U	0.33	✓
Extractable Phosphorus	mg/l	U	46	✓
Extractable Potassium	mg/l	U	719	✓
Extractable Magnesium	mg/l	U	132	✓

Total Arsenic (As)	mg/kg	M	3	✓
Total Barium (Ba)	mg/kg	M	118	✓
Total Beryllium (Be)	mg/kg	M	0.3	✓
Total Cadmium (Cd)	mg/kg	M	0.2	✓
Total Chromium (Cr)	mg/kg	M	32	✓
Total Copper (Cu)	mg/kg	M	31	✓
Total Lead (Pb)	mg/kg	M	32	✓
Total Mercury (Hg)	mg/kg	M	0.1	✓
Total Nickel (Ni)	mg/kg	M	19	✓
Total Selenium (Se)	mg/kg	M	0.5	✓
Total Vanadium (V)	mg/kg	M	16.0	✓
Total Zinc (Zn)	mg/kg	M	98	✓
Water Soluble Boron (B)	mg/kg	M	2.2	✓
Total Cyanide (CN)	mg/kg	M	<1	✓
Total (mono) Phenols	mg/kg	U	<1	✓
Elemental Sulphur (S)	mg/kg	M	<20	✓
Acid Volatile Sulphide (S)	mg/kg	U	<1	✓
Water Soluble Sulphate (SO4)	g/l	M	0.3	✓
TPH by GC-FID (C10-C40)	mg/kg	M	<50	✓

Naphthalene	mg/kg	M	0.4	✓
Acenaphthylene	mg/kg	M	<0.1	✓
Acenaphthene	mg/kg	M	<0.1	✓
Fluorene	mg/kg	M	<0.1	✓
Phenanthrene	mg/kg	M	<0.1	✓
Anthracene	mg/kg	M	<0.1	✓
Fluoranthene	mg/kg	M	0.2	✓
Pyrene	mg/kg	M	0.2	✓
Benzo(a)anthracene	mg/kg	M	<0.1	✓
Chrysene	mg/kg	M	<0.1	✓
Benzo(b)fluoranthene	mg/kg	M	0.2	✓
Benzo(k)fluoranthene	mg/kg	M	0.1	✓
Benzo(a)pyrene	mg/kg	M	<0.1	✓
Indeno(1,2,3-cd)pyrene	mg/kg	M	<0.1	✓
Dibenzo(a,h)anthracene	mg/kg	M	<0.1	✓
Benzo(g,h,i)perylene	mg/kg	M	<0.1	✓
Total PAHs (sum USEPA16)	mg/kg	M	<1.6	✓

**Visual Examination**

Brown, dry, friable sandy loam with a moderately developed fine to coarse granular structure. Stone free with no observable deleterious materials, including foreign matter (brick concrete glass metal plastic) and roots or rhizomes of pernicious weeds (including couch grass and Japanese knotweed)

✓	Meets Sports 10 Specification
X	Fails Sports 10 Specification
SL	Sandy Loam Texture Class
M	MCERTS accredited method (& UKAS accredited method)
U	UKAS accredited method
G	GLP accredited method