

Verification of Remediation of Seckers Welding Site

Fen Road, Holbeach, Spalding, Lincolnshire, PE12 7LF

Planning Application No. H09-0242-16

1. Background

The site investigation carried out by Stuart Guy Consulting and reported in SGC report number 17-05-04, dated 07/12/2017, found evidence for potential contamination by petroleum hydrocarbons, probably originating from sooty deposits (polycyclic aromatic hydrocarbons) and oil or fuel (total petroleum hydrocarbons). Not all areas on the site reported elevated hydrocarbons, just those associated with plots 1 – 7. All the hydrocarbons were of high molecular weight with almost no vapour pressure. Therefore, only the rear gardens required removal of soil down to 600 mm below finished ground level and sub soil and top soil applied to replace the excavated materials.

Communal areas, foundations, paths, etc do not require any remediation.

This report relates to plots 1 – 7.

2. Evidence for Verification of the Remediation Plan

The evidence consists of:

Photographs of the excavated garden areas with indications of the depth to which they will be filled and calculated areas.

An analytical certificate for the top soil that has been obtained from British Sugar.

Delivery notes for sub soil (sharp sand has been used for this purpose as the soil has very poor drainage owing to the very clayey soil on the site) and top soil which has been used to replace the excavated rear garden areas.

3. Evidence relating to sop soil and sharp sand

The certificate for the soil collected from British Sugar, Wissington, is the pdf document ‘17-05-04 British Sugar Wissington L20 June 18.pdf’ and to demonstrate consistency of the soil ‘17-05-04 British Sugar Wis L20 Sep 18 Last 4 Samples.pdf’.

The weighbridge and transfer tickets soil deliveries are listed in the pdf document ‘17-05-04 topsoil tickets’, the transfer tickets, dates and weights are as follows in the order in that document:

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ticket	date	mass tonnes
14710	26/06/18	18.06
14708	26/06/18	17.82
14709	26/06/18	18.26
13891	26/06/18	18.32
13890	26/06/18	18.38
13889	26/06/18	18.38
14711	27/06/18	18.20
14712	27/06/18	18.32
14713	27/06/18	18.20
	Total	163.94

The weighbridge printouts and transfer tickets are listed in the pdf documents '17-05-04 sand weighbridge tickets' and '17-05-04 sand lorry tickets' and are in the same order in the table that follows and it shows that the soil delivered matches the weighbridge tickets, even though there has been some approximations on the later deliveries.

w/bridge ticket	date	mass tonnes	transfer ticket	Date	mass tonnes
1431994	21/06/18	19.12	13885	21/06/18	19.12
2035536	21/06/18	15.18	14842	21/06/18	15.18
2035525	21/06/18	15.50	14842	21/06/18	15.50
2035531	21/06/18	14.94	14842	21/06/18	14.94
2035549	22/06/18	15.08	14845	22/06/18	15.08
2035555	22/06/18	15.78	14845	22/06/18	15.78
2035564	22/06/18	14.90	14845	22/06/18	14.90
1431995	21/06/18	18.54	13816	21/06/18	18.54
1436138	05/07/18	15.26	14099	05/07/18	16.00
1436160	06/07/18	15.64	14793	06/07/18	15.00
1436148	06/07/18	15.40	14793	06/07/18	15.00
1436175	09/07/18	15.04	14556	09/07/18	16.00
1436179	09/07/18	15.30	14796	09/07/18	15.00
1436180	09/07/18	15.32	14796	09/07/18	15.00
	Total	221.00		Total	221.04

4. Information relating to plots 1 - 7

Photographs 1 – 14 relate to each of the plots and show the excavated depth and area. The following plot sizes and depths of sand and soil replacement were supplied by Peter Pitt of D Brown Building Contractors Ltd (document '17-05-04 e-mail P Pitt planning.doc'). The volume of soil is multiplied by the approximate density of soil which is 1.2 t m^{-3} to arrive at the mass of soil and the volume of sand is multiplied by the approximate density of sand which is 1.5 t m^{-3} .

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Plot no.	area	depth sand	sand m ³	depth soil	soil m ³
1	37.8	0.38	14.36	0.30	11.34
2	35.6	0.34	12.10	0.30	10.68
3	44.8	0.36	16.13	0.30	13.44
4	83.8	0.35	29.33	0.30	25.14
5	51.0	0.35	17.85	0.30	15.3
6	86.9	0.38	33.02	0.30	26.07
7	85.6	0.38	32.53	0.30	25.68
		Total	155.33	Total	127.65
		Tonnes	232.99	Tonnes	153.18

Total sand applied to these gardens is **233 tonnes**

Total soil applied to these gardens is **153 tonnes**

The sand to be applied is estimated at about **233 tonnes** and **221 tonnes** was delivered, an apparent difference of 12 tonnes or about 5%. However, the density is an estimate with a variation of +/- 10 % and measurements have variations, so this illustrates that sufficient soil has been applied.

The soil to be applied is estimated at about **153 tonnes** and **164 tonnes** was delivered, this illustrating that sufficient soil was delivered.

5. Summary

Photographs of the seven plots show that rear gardens have been excavated, then sharp sand has been applied as sub base, the top soil applied is suitable for use in rear gardens and sufficient of both has been applied to meet the requirements for plots 1 - 7. The remediation requirement has been met on these plots.

Stuart Guy, BSc, PhD, C Chem, MRSC, C Eng, MIMMM

Photo 1 Rear garden of plot 1 showing depth of excavation



Photo 2 Rear garden of plot 1 showing area excavated



Photo 3 Rear garden of Plot 2 showing depth of excavation



Photo 4 Rear garden of plot 2 showing area excavated



Photo 5 Rear garden of Plot 3 showing depth of excavation



Photo 6 Rear garden of plot 3 showing area excavated



Photo 7 Rear garden of Plot 4 showing depth of excavation



Photo 8 Rear garden of plot 4 showing area excavated



Photo 9 Rear garden of Plot 5 showing depth of excavation



Photo 10 Rear garden of plot 5 showing area excavated



Photo 11 Rear garden of Plot 6 showing depth of excavation



Photo 12 Rear garden of plot 6 showing area excavated



Photo 13 Rear garden of Plot 7 showing depth of excavation



Photo 14 Rear garden of plot 7 showing area excavated

