



# **Report on Ground Investigation**

(Area A – Proposed Domestic Houses)

**58-64 STATION ROAD  
HAYLING ISLAND, HAMPSHIRE  
PO11 0EL**

**For : Mr Nigel Slydell**

**Report Ref: 517 / R03**

**Dated : 24<sup>th</sup> December 2014**

**Director : D I Grant BSc (Hons) PhD**

Geotechnical & Geoenvironmental Consultants

*Dig-Geotech Limited Registered in England and Wales.  
Company Number 5335508. VAT No 871 353 031*

# **Report on Ground Investigation**

(Area A – Proposed Domestic Houses)

58-64 STATION ROAD  
HAYLING ISLAND, HAMPSHIRE  
PO11 0EL

Report No 517 R03. Rev 0

|       |            |               |
|-------|------------|---------------|
|       |            |               |
| Rev 0 | 24 12 2014 | Report issued |

December 2014

Prepared for Nigel Slydell  
by Dig-Geotech Ltd

Filename: C:\Users\David\Documents\Consultancy\517 58-64 Station Rd, Hayling\Reports\Rep  
No517\_R03 StationRd Area A GI Rep.doc

## Table of Contents

|                                                 |    |
|-------------------------------------------------|----|
| 1. INTRODUCTION.....                            | 4  |
| 2. THE SITE .....                               | 5  |
| 2.1 Site Location and Topography .....          | 5  |
| 2.2 Geology .....                               | 6  |
| 2.3 Proposed Development .....                  | 6  |
| 2.4 Previous Reports .....                      | 6  |
| 3. GROUND INVESTIGATION.....                    | 7  |
| 3.1 Fieldworks.....                             | 7  |
| 3.2 Laboratory contamination testing .....      | 9  |
| 3.3 Laboratory geotechnical testing.....        | 9  |
| 4. RESULTS.....                                 | 10 |
| 4.1 Ground Profile .....                        | 10 |
| 4.2 Laboratory Contamination Test Results ..... | 10 |
| 5. DISCUSSION .....                             | 13 |
| 5.1 Potential soil contamination .....          | 13 |
| 5.2 Potential gases contamination .....         | 13 |
| 5.3 Discovery Strategy.....                     | 14 |
| 5.4 Revised Conceptual Model .....              | 16 |
| 6. CONCLUSIONS.....                             | 17 |

## References

|                     |                                                       |
|---------------------|-------------------------------------------------------|
| <b>Appendix A -</b> | <b>Architects plans</b>                               |
| <b>Appendix B -</b> | <b>Exploratory hole logs</b>                          |
| <b>Appendix C -</b> | <b>Laboratory test data</b>                           |
| <b>Appendix D -</b> | <b>Discovery Strategy &amp; Remediation Statement</b> |

# 1. INTRODUCTION

Mr Nigel Sydell wishes to develop a site at 58-64 Station Road, Hayling Island, Hampshire. The proposed development area is shown by Figure 1. The north-eastern part of the site is to become domestic housing. The south-western part of the site is to become commercial offices. This ground investigation report refers to the northeast, domestic part of the site only. The ground investigation works for the south-western part of the site are discussed in Report No 517 / R04.

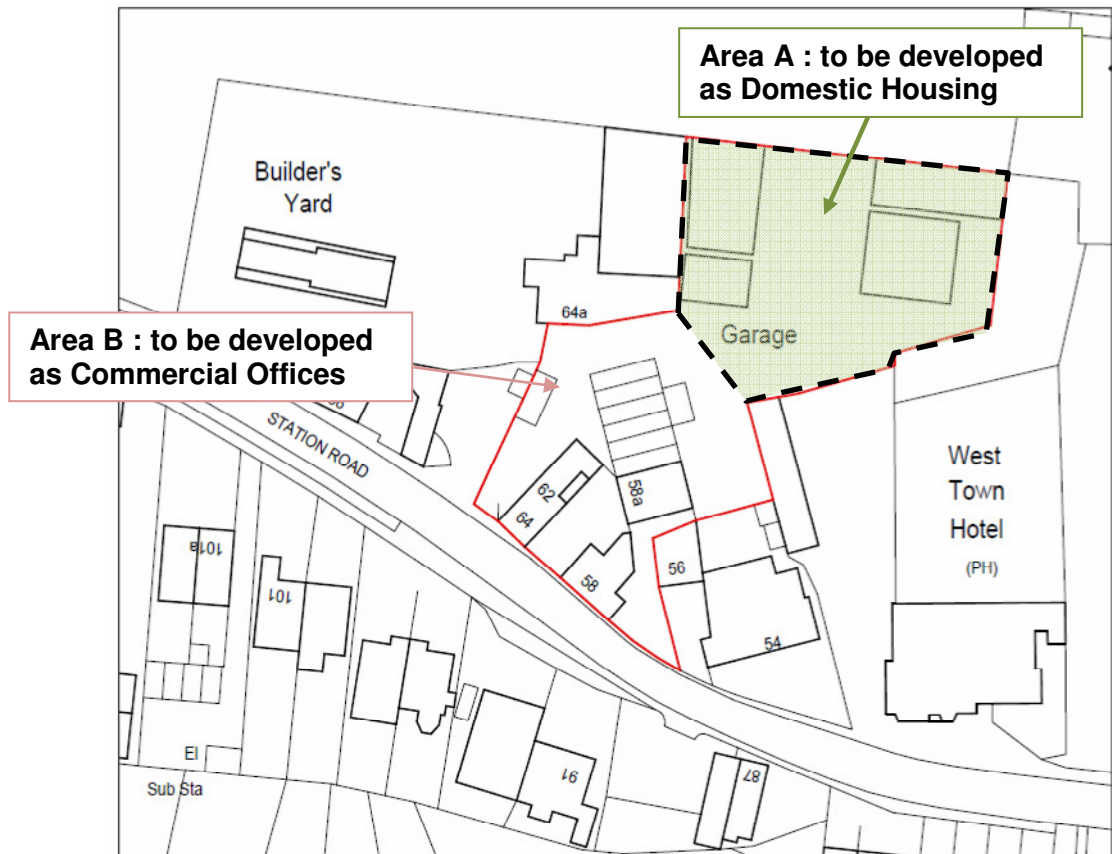


Figure 1 : Proposed Development Area

Dig-Geotech Ltd prepared a desk study for the site in November 2014 (*Ref 1*). Subsequent to that an intrusive ground investigation has been carried out at the site.

This report details the ground investigation works carried out, presents the results and discusses the findings in relation to the proposed development.

## 2. THE SITE

### 2.1 Site Location and Topography

The site is located to the north of Station Road, Hayling Island, Hampshire (Figures 2, 3). OS map information suggests the site to be at an elevation of about 5.8mOD. Landfall in the area is a very shallow drop in levels towards the north and west. The site itself was more or less level.

At the time of the ground investigation the site comprised a motor repair garage.

The site was bounded to the west by a Jewson's builder's merchants. To the east and north were mostly gardens of properties on Station Road and to the north a shallow ditch with an open field beyond.



*Reproduced where appropriate with permission of Ordnance Survey ® on behalf of HMSO. © Crown Copyright. All rights reserved. License 100046399*

Figure 2 : Site Location



Figure 3 : Site Location

## 2.2 Geology

The 1:50,000 British Geological Survey (BGS) map for the area shows the site to be underlain by *River Terrace Deposits (sand, silt & clay)* over the *London Clay Formation*. However a sub-crop of the *Portsmouth Sand* is shown underlying the Terrace Gravels a very short distance south of the site. The underlying soils are hence likely to be a Terrace Gravels near the surface and a London Clay at depth, with a small possibility of a more sandy stratum at depth towards the south of the site.

## 2.3 Proposed Development

**Appendix A** shows the currently proposed layout. The site is to be redeveloped as five domestic houses with areas of private gardens. The houses are towards the north & east of the site with driveways and allocated parking at the south.

## 2.4 Previous Reports

A desk study was prepared for the site in November 2014 by Dig-Geotech Ltd (*Ref 1*). The desk study concluded there to be a low risk

related to potential soil contamination. Some intrusive ground investigation for potential soil contamination was recommended. Radon gases had been identified as a potential risk by the desk study information and hence a radon resistant gases membrane was also recommended below domestic houses. It was further recommended that the radon membrane be upgraded to guard against methane, carbon dioxide and any small volumes of vapours related to hydrocarbons residues.

Former site uses of concern were noted as :-

- Former gas holder at the site
- Former gas works on the adjacent part of the site (Area 'B')
- Motor repair garage at the site
- 2 No above ground oils tanks associated with the above.

## 3. GROUND INVESTIGATION

### 3.1 Fieldworks

Five machine excavated trial pits and two windowless sampler boreholes were put down at the site on the 27<sup>th</sup> November 2014. Exploratory hole locations are shown by Figure 4.

The boreholes were to depths of 3.0m and the trial pits to depths of between 1.0m and 2.1m. The boreholes were put down by Geoprobe Environmental Ltd with Engineers' borehole logs prepared by an engineering geologist from Geoprobe Environmental Ltd. The trial pits were supervised and logged by a geotechnical engineer from Dig-Geotech Ltd. Exploratory hole logs are enclosed as **Appendix B**.

Representative soil samples were taken from the exploratory holes for possible laboratory chemical and / or geotechnical testing. Samples were taken using a cleaned stainless steel trowel and placed into a cooled & insulated container for transfer to the laboratory.

A standpipe piezometer with gas tap was installed at WS1.

**Key :**

- = Trial pit, Area A
- = Borehole, Area A
- = Trial pit, Area B
- = Borehole, Area B

Area B results report in Report No 517/R04

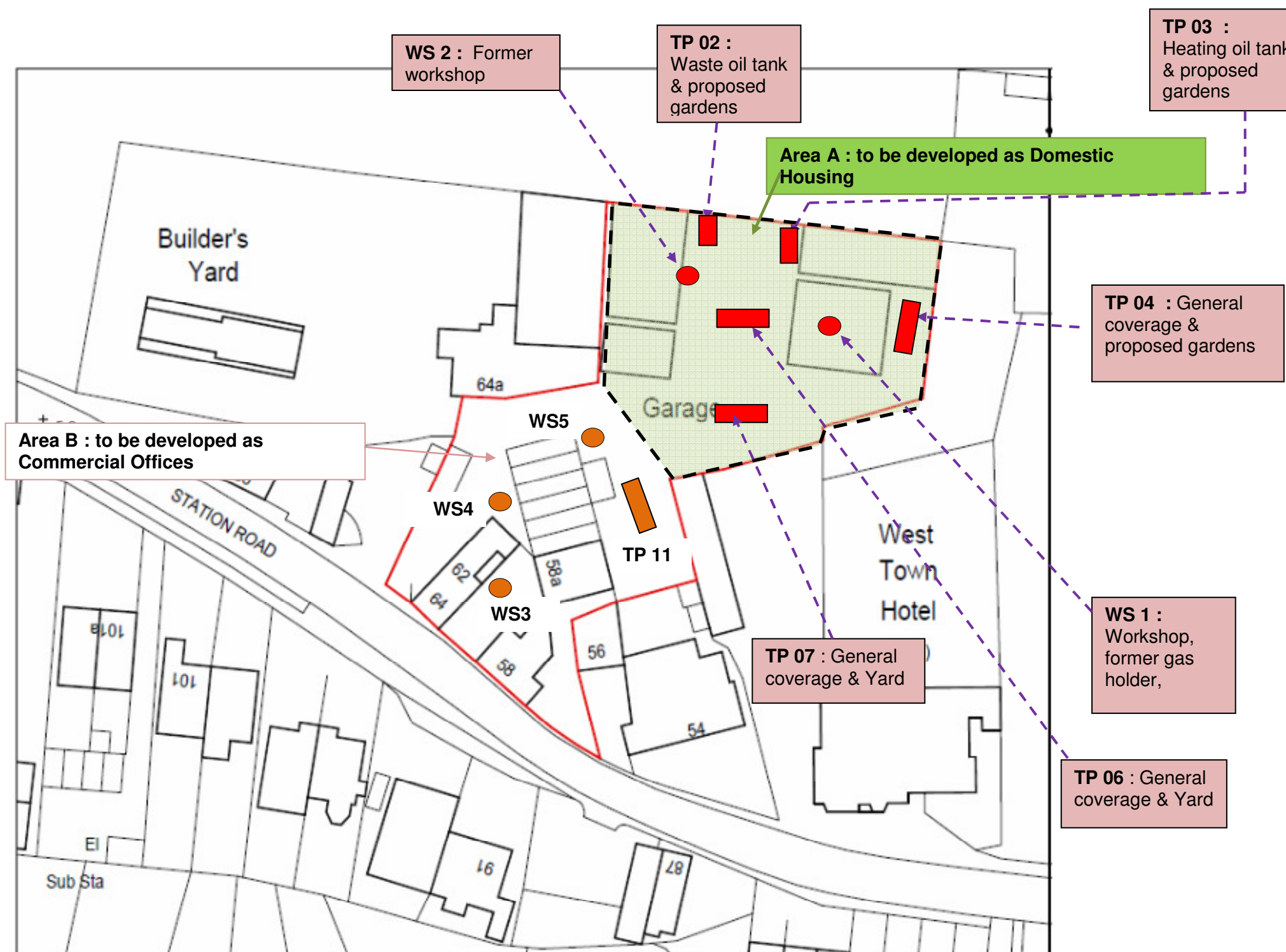


Figure 4 : Exploratory Hole Location Plan

### **3.2 Laboratory contamination testing**

Nineteen representative soil samples were couriered to QTS Environmental Ltd for laboratory chemical analysis. QTS Ltd is a UKAS and MCerts accredited laboratory.

Samples were tested for a range of potential organic and inorganic contaminants as detailed in Section 4.2.

The results of the laboratory chemical testing are enclosed as **Appendix C**.

### **3.3 Laboratory geotechnical testing**

Some samples were sent for basic laboratory geotechnical testing related to foundations assessments for shrinkability. The results shall be reported under separate cover.

## 4. RESULTS

### 4.1 Ground Profile

The exploratory holes revealed concrete surfacings over a natural silt / clay with gravels and sands at depth. No significant depth of made ground was revealed.

The concrete was an unreinforced concrete paving other than at WS1 and TP2 where steel reinforcement was noted. Depths were 0.15m to 0.25m only other than at WS1 where the concrete was recorded to 0.5m depth. WS 1 was within a building and hence had a thicker floor slab than elsewhere.

Soft to stiff natural silts and clays were immediately below the concrete and extended to depths of 0.4m to 1.5m. Below the silt / clay was a sandy gravel in turn underlain by a sand proven to 2.1m depth.

Standard penetration tests (SPT) showed the sands and gravels as medium dense with SPT N values of between 13 and 28.

Groundwater was generally encountered at about 1.0m to 1.9m depth. Excavations below groundwater level were unstable.

### 4.2 Laboratory Contamination Test Results

The results for the laboratory chemical testing are enclosed as **Appendix C**.

19 soils samples were taken from within Area A of the site. The following paragraphs detail the test results and compare them to published guidance. The findings are discussed in relation to the proposed development at Section 5.1.

#### **Asbestos fibres**

Three samples of near surface soil were tested for an asbestos fibres screen. No asbestos fibres were detected.

## General inorganic suite

The QTS results had a general suite of results for pH, total cyanide, total sulphate as SO<sub>4</sub>, sulphide and TOC.

**pH** values were mostly alkaline or close to neutral. TP06 (0.75m & 1.20m) had two pH values at 3.6 & 4.5 that were lower than elsewhere. The **total sulphates** values are relevant to concrete design and not discussed further here other than to note concentrations were mostly low. **TOC** values varied between 0.1 and 1.5%.

**Total cyanide** concentrations were at between <2mg/kg and 15mg/kg. The concentrations were below any likely risk for human health as indicated by published CLEA (*Ref 3*) derived values of 23mg/kg gac value for a *residential use*.

## Metals suite

The metals suite comprised **As, Boron** (water soluble), **Cd, Cr, Cu, Pb, Hg, Ni, Se & Zn**.

Lead (Pb) and Nickel (Ni) are discussed below. Comparison of the laboratory test results for the other metals to published CLEA or CIEH soil guideline values for the more exacting of a *Residential* or *Allotment land use* showed all concentrations at below the published soil guideline values for all determinands. No risk to human health is hence considered likely for those metals.

Lead (**Pb**) concentrations were between 17 and 66mg/kg at all but two locations. At TP04 (0.15m) and TP07 (0.1m) concentrations of 372 and 90mg/kg were noted. The values below 66mg/kg are not considered of risk. The two higher concentrations shall need action as discussed in Section 5.1. Nickel (Ni) concentrations were mostly low and all below recommended guideline values for a *residential land use*. However at TP02 (0.5m) a value of 33mg/kg was noted that is slightly above the *allotment* GAC of 23mg/kg but well below the *residential land use* value of 130mg/kg.

## Phenols

**Total phenols** have been assessed at a typical safe limit for water services pipes of 5mg/kg rather than the very much higher CLEA

SGV's of 420mg/kg for *Residential land use*. Phenol concentrations were all <2mg/kg i.e well below any likely risk for human health and below a threshold at which water services pipes may need further protection.

### **Speciated PAH's**

Comparison of the laboratory test results to published CIEH soil guideline values for both a *residential use* and an *allotment land use* showed all concentrations at well below the published soil guideline values for all determinands. No risk to human health is hence considered likely.

### **TPH - GWC Banded**

Comparison of the laboratory test results to published CIEH soil guideline values for *residential land use* showed all concentrations at well below the published soil guideline values for all determinands. No risk to human health is hence considered likely.

### **BTEX, MTBE & VOC's**

Comparison of the laboratory test results for all **BTEX** substances to published CIEH soil guideline values for *residential land use* showed all concentrations as low and at well below the published soil guideline values for all determinands. No risk to human health is hence considered likely.

Soil **MTBE** values were very low at less than 0.005mg/kg compared to a recommended residential (with plant uptake) GAC of 49mg/kg (*Ref 5*). No risk to human health is considered likely.

An EA recommended SSV is available for **Toluene** at 0.3mg/kg which is below the detection limit of <5mg/kg reported for the testing. No firm conclusions can hence be drawn. However all soils samples showed toluene at <5mg/kg and significant impact by toluene seems unlikely.

VOC concentrations were all below published GAC's given by CIEH for a residential land use.

## 5. DISCUSSION

### 5.1 Potential soil contamination

Desk study information & a conceptual model showed a low risk at the site due to potential soil contamination. Intrusive ground investigation has generally confirmed the risk as low.

No significant depths of made ground were revealed. Laboratory contamination testing showed most samples as suitable for use within a residential setting. Samples at TP04 (0.15m) and TP07 (0.1m) both had very slightly elevated levels of lead and a sample TP02 (0.5m) had nickel above the recommended guideline value for allotments, but well below that suggested for a residential land use.

Figure 5 shows the exploratory hole locations compared to both existing and proposed block plans. TP's 2 & 4 were within proposed domestic garden areas and TP7 was within an area of proposed parking.

At TP7 the proposed parking surface shall act as an adequate protection and no remediation work are proposed. At TP's 2 & 4 the upper 1.0m of soil needs to be suitable as a domestic garden. Lead was noted in the upper 0.15m only. It is likely that the upper 0.15m of soil shall be removed as part of site preparation works. However it is recommended that the works be carried out more formally and a hence it is proposed that the upper 0.25m of soil in all garden areas be removed from site and replaced with suitable clean imported topsoils. **Appendix D** has a Remediation Statement for the works.

No other remediation works are considered necessary for potential soils contamination. Section 5.2 discusses potential gases contamination.

### 5.2 Potential gases contamination

Desk study information identified a risk of radon gases due to deep geology & hence a radon proof gases membrane is required below the new houses.

A small risk at the site due to carbon dioxide & methane related to possible breakdown of putrescible materials, hydrocarbons, coal dusts etc was also identified. Intrusive ground investigation did not reveal any significant depth of made ground, coal dusts or putrescible materials

etc. Some isolated odours of hydrocarbons were observed in some exploratory holes, but testing of samples did not show any potential risk to human health. A small risk may remain from possible migration to the site of gases associated with any residual gas works waste that may be present at the former gas works to the immediate southwest of the site.

Risks are considered low. The proposed domestic houses shall require a radon membrane. The radon membrane should be upgraded to give protection from odour nuisance and any small volumes of ground gases that may migrate to below the new houses. **Appendix D** includes a Remediation Statement for the membrane installation.

### 5.3 Discovery Strategy

Ground investigation has shown no significant depths of made ground or large areas of potential soil contamination. However given the site history there is a small chance of made ground or other features not shown by this investigation being revealed. The Remediation Statement presented as **Appendix D** includes a *Discovery Strategy* to deal with such circumstances.

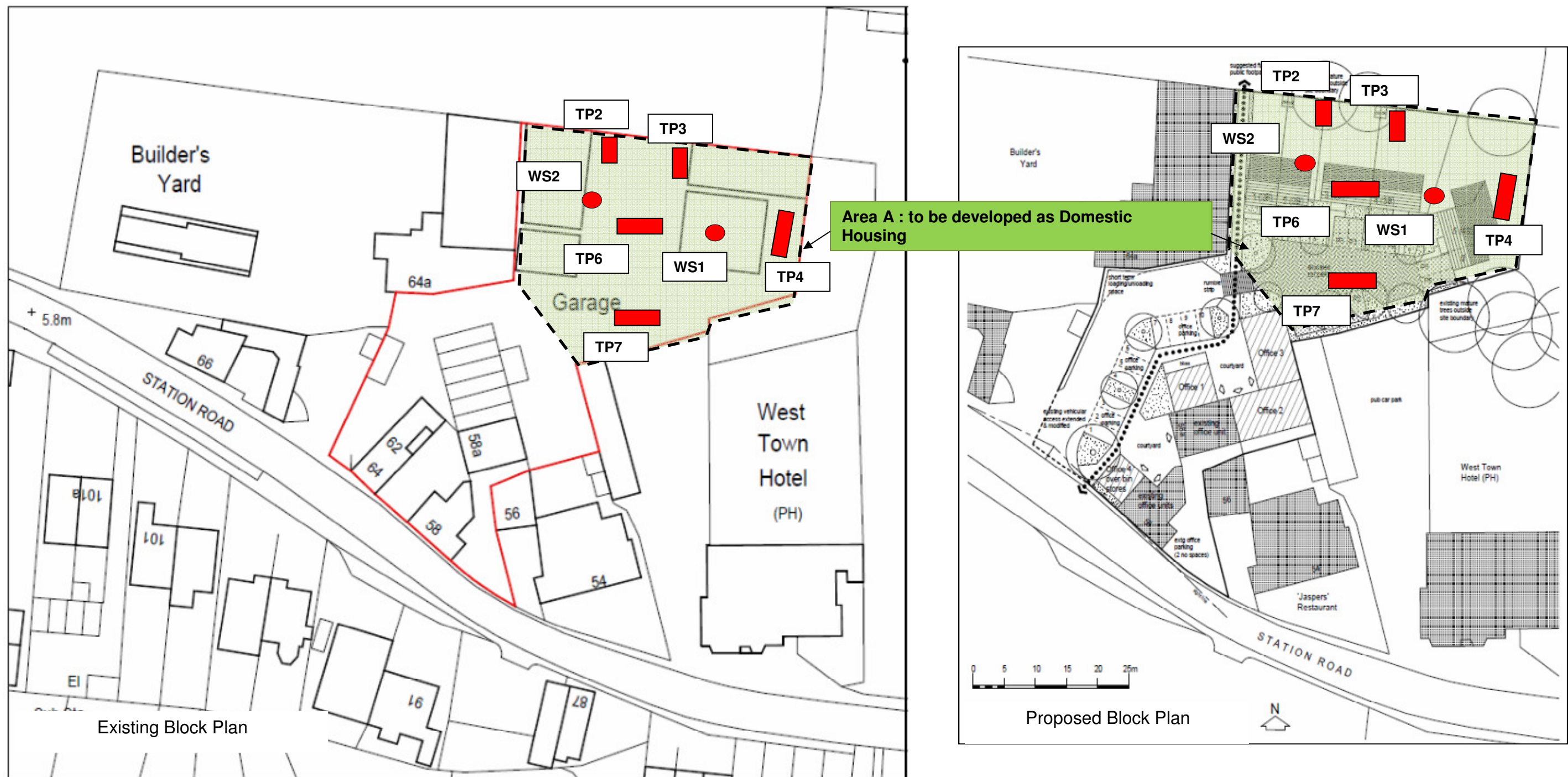


Figure 5 : Exploratory Hole Locations

## 5.4 Revised Conceptual Model

Figure 6 shows a revised Conceptual Model for the site. The model is revised from that presented as Figure 5 of the Desk Study Report (*Ref 1*). The revised model assumes that all remediation works presented in the Remediation Statement are carried out. The model shows no risk to future site occupiers.

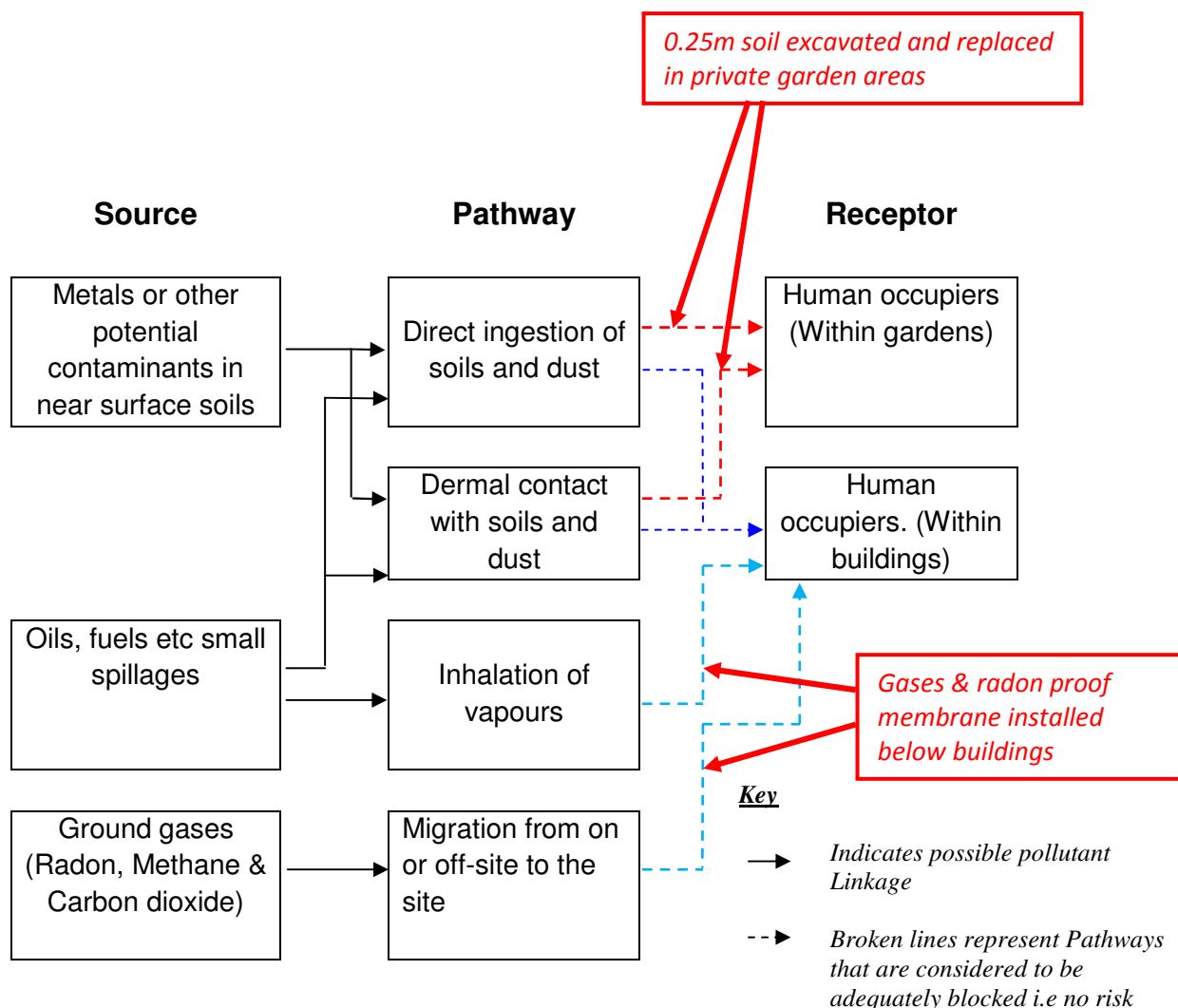


Figure 6 : Network diagram to show Revised Conceptual Model

The conceptual model does not explicitly consider services trenches and future maintenance workers. All services trenches should be over excavated by 50mm and arisings disposed of off-site. Clean imported granular materials should be used as a bedding and backfill to services runs. Appendix D includes a Remediation Statement for services runs

## 6. CONCLUSIONS

A ground investigation for the area of some proposed domestic houses at 58-64 Station Road, Hayling Island has shown a low risk related to potential soil contamination. Some remediation works in garden area for potential soil contamination has been recommended. Radon gases had previously been identified as a potential risk by desk study information and hence a radon resistant gases membrane has been recommended below domestic houses. It is further recommended that the radon membrane be upgraded to also guard against methane, carbon dioxide and any small volumes of vapours related to hydrocarbons residues.

The results of this report should be discussed with the local authority environmental health & planning teams prior to any works commencing at site.

### Report prepared by



.....  
...

24 December 2014

D I Grant BSc, PhD

### References :

1. *Dig-Geotech Ltd (2014)*. 58-64 Station Road, Hayling Island Hampshire PO11 0E (Area A - domestic Housing). Report on Desk Study. Rep No 517 / R01 November 2014.
2. *The Contaminated Land Exposure Assessment (CLEA) Model*. CLR 10 (and associated publications). DEFRA / Environment Agency. March 2002
3. *Nathanial CP et al. Generic Assessment Criteria for Human Health Risk Assessment*. Land Quality Press. Nottingham ISBN 0-9547474-3-7. (Produced for Chartered Institute of Environmental Health)
4. *Environment Agency (2010)*. Environment Agency Guiding Principals for Land Contamination (GPLC).

5. EIC/AGS/CL:AIR (2010). Soil Generic Assessment Criteria for Human Health Risk Assessment.

# **APPENDIX A**

## **ARCHITECTS PLANS**



# Proposed Block Plan 1:500

Ordnance Survey (c) Crown Copyright 2014. All rights reserved. Licence number 100022432

| revisions                                                                                                  |      | date     |          |                                                                                       |
|------------------------------------------------------------------------------------------------------------|------|----------|----------|---------------------------------------------------------------------------------------|
| drawing                                                                                                    | rev. | date     | scale(s) | sheet size                                                                            |
| 21412/SK01                                                                                                 |      | SEP 2014 | 1:500    | A4                                                                                    |
| client                                                                                                     |      |          |          |                                                                                       |
| N P SLYDELL                                                                                                |      |          |          |                                                                                       |
| project                                                                                                    |      |          |          |                                                                                       |
| PROPOSED REDEVELOPMENT OF HAYDEN GARAGES, 62-64 STATION ROAD<br>HAYLING ISLAND, HANTS PO11 0EL             |      |          |          |                                                                                       |
| Jeffrey Douglas Chartered Architect                                                                        |      |          |          |  |
| 114 Havant Road Hayling Island Hampshire PO11 0LJ<br>Tel: (023) 9246 8889 E-mail: jdd@jeffreydouglas.co.uk |      |          |          |                                                                                       |

This drawing is the copyright of the Architect and must not be reproduced without permission, except by the Local Planning Authority for planning purposes.

Figured dimensions to be taken in preference to scaled.  
 Dimensions to be checked on site before work commences.  
 No deviation from this drawing will be permitted without the prior written consent of the Architect.  
 Ground floor slabs, foundations, structure, etc., and all work below ground is shown provisionally and inspection of ground conditions is essential prior to work commencing.  
 Reassessment is essential when the ground conditions are apparent and redesign may be necessary in the light of soil conditions found.  
 The responsibility for establishing the soil and subsoil conditions rests with the Contractor.

## **APPENDIX B**

### **EXPLORATORY HOLE LOGS**

Area A – Domestic Housing

WS 1

WS2

TP02

TP03

TP04

TP06

TP07



|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|------------------------------------|---------------|-------------------|--------|---------------------------------|---------------------------------------------------------------------------------------------------------------|-----------|--------------------------|
| <b>GEOPROBE ENVIRONMENTAL LTD</b>  |               |                   |        |                                 | <b>Window Sample No</b> WS2                                                                                   |           |                          |
| <b>Contract</b>                    |               |                   |        |                                 | <b>Report No</b> GPE                                                                                          |           |                          |
| <b>Client</b>                      |               |                   |        |                                 | <b>Date</b> 27/11/14                                                                                          |           |                          |
| <b>Site Address</b> Hayling Island |               |                   |        |                                 | Ground Level , mOD                                                                                            |           |                          |
| Type of Excavator                  |               | Premier 110       |        | Water level after completion, m |                                                                                                               | 0.50      |                          |
| Water Strikes, m                   |               | Pit Dimensions, m |        | Ease of Excavation, m           |                                                                                                               |           |                          |
| 1                                  | 1.15          | Length            | 100mmφ | Very Easy                       | <input type="checkbox"/>                                                                                      | Difficult | <input type="checkbox"/> |
| 2                                  |               | Breadth           |        | Moderate                        | <input checked="" type="checkbox"/>                                                                           | Very hard | <input type="checkbox"/> |
| <b>Observations:</b>               |               |                   |        |                                 |                                                                                                               |           |                          |
| Sample Type                        | Depth, m      | SPT 'n'           | Depth  | Legend                          | Description                                                                                                   |           |                          |
|                                    |               |                   | 0.25   |                                 | Concrete                                                                                                      |           |                          |
| ES                                 | 0.30          |                   |        |                                 | soft to firm grey brown silty CLAY with occasional fine to medium flint gravel and decaying roots             |           |                          |
| D                                  | 0.50          |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
| D                                  | 1.00          | 1,1/1,5,8,9<br>23 |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   | 1.40   |                                 | Medium dense blue grey clayey sandy fine to coarse flint GRAVEL                                               |           |                          |
| D                                  | 1.50          |                   |        |                                 |                                                                                                               |           |                          |
| ES                                 | 1.80<br>-2.00 | 2,5/4,7,6,6<br>23 | 1.80   |                                 | Medium dense grey brown SAND with occasional flint gravel and hydrocarbon odour<br><br>becoming more gravelly |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
| D                                  | 2.50          |                   | 2.50   |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
| D                                  | 3.00          | 3,3/3,3,4,5<br>15 | 3.00   |                                 | End of hole                                                                                                   |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |
|                                    |               |                   |        |                                 |                                                                                                               |           |                          |

Code:      D – disturbed sample      W – Water sample

# TRIAL PIT LOG

*Dig-Geotech Limited*  
*Geotechnical &*  
*Geoenvironmental Consultants*

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 02**

Client: Nigel Sydell

Job No: 517

Date 27 November 2014

Sheet 1 of 2

| Depth (m)  |      | Strata Description                                                                        | Sampling  |
|------------|------|-------------------------------------------------------------------------------------------|-----------|
| GL – 0.25  | 0.0m | Concrete in good order, slight stain at surface, visually clean immediately below surface | 0.30 D, J |
| 0.25 – 0.5 |      | Firm (wet) brown SILT with many roots.                                                    |           |
| 0.5 – 1.00 | 0.5m | Firm light brown SILT.                                                                    | 0.5 D, J  |
|            |      | ...becoming firm to stiff.                                                                |           |
|            |      | No visual or olfactory indications of hydrocarbon                                         | 1.0 D, J  |
|            | 1.0m | <b>End of Pit / Hand Augur : 1.0m</b>                                                     |           |
|            |      |                                                                                           |           |
|            | 1.5m |                                                                                           |           |
|            |      |                                                                                           |           |
|            | 2.0m |                                                                                           |           |
|            |      |                                                                                           |           |
|            | 2.5m |                                                                                           |           |
|            |      |                                                                                           |           |
|            | 3.0m |                                                                                           |           |

Comments (if required) :

*Pit below former above ground oil tank. Access difficulty for machine & hence hand dug to 0.4m and hand augured from 0.4m to 1.0m depth.*

Pit Stability: Sides & base stable

Groundwater Dry  
observations:

Logged by: DIG

Pit Size: 0.5m x 2.0m

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 02**

Client: Nigel Sydell

Job No: 517

Date 27 November 2014

Sheet 1 of 2

---

### PHOTOGRAPHS



# TRIAL PIT LOG

Dig-Geotech Limited  
Geotechnical &  
Geoenvironmental Consultants

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 03**

Client: Nigel Sydel

Job No: 517

Date: 27 November 2014

Sheet 1 of 2

| Depth (m)   |      | Strata Description                                                                             | Sampling |
|-------------|------|------------------------------------------------------------------------------------------------|----------|
| GL – 0.15   | 0.0m | Concrete in good order, slight stain at surface, visually clean immediately below surface      | 0.15 J   |
| 0.15 – 0.25 |      | Brown rounded sandy GRAVEL. Visually clean with no olfactory indications of hydrocarbons.      | 0.30 D   |
| 0.25 – 1.00 | 0.5m | Firm light brown SILT. Small roots & rootlets visible to 0.6m depth                            | 0.5 D, J |
|             |      | No visual or olfactory indications of hydrocarbon.                                             |          |
| 1.0 – 1.1   | 1.0m | Light brown sub-angular medium to coarse GRAVEL in matrix of stiff brown silty clay. (Hogging) | 1.0 D, J |
|             |      | End of Pit 1.1m                                                                                |          |
|             | 1.5m |                                                                                                |          |
|             | 2.0m |                                                                                                |          |
|             | 2.5m |                                                                                                |          |
|             | 3.0m |                                                                                                |          |

Comments (if required) :

*Pit below former above ground oil tank. Tank removed prior to trial pit excavation.*

Pit Stability: Sides & base stable

Groundwater observations: No Groundwater, soil wet

Logged by: DIG

Pit Size: 0.4m x 1.8m

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 03**

Client: Nigel Sydell

Job No: 517

Date 27 November 2014

Sheet 1 of 2

---

### PHOTOGRAPHS



# TRIAL PIT LOG

*Dig-Geotech Limited*  
*Geotechnical &*  
*Geoenvironmental Consultants*

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 04**

Client: Nigel Sydel

Job No: 517

Date 27 November 2014

Sheet 1 of 2

| Depth (m)  |      | Strata Description                                     | Sampling         |
|------------|------|--------------------------------------------------------|------------------|
| GL – 0.12  | 0.0m | Concrete slab in good order                            |                  |
| 0.12 – 1.3 |      | Firm brown SILT. Small roots to 0.3m depth.            | 0.15 J<br>0.30 D |
|            | 0.5m | ....becoming firm to stiff below 0.8m                  | 0.5 D, J         |
|            | 1.0m |                                                        | 1.0 D, J         |
| 1.3 – 1.8  | 1.5m | Light grey sandy fine to coarse rounded GRAVEL.        | 1.5 D            |
| 1.8 – 2.0  |      | Light brown SAND with occasional medium rounded gravel | 2.0 D            |
|            | 2.0m | <b>End of Pit 2.0m</b>                                 |                  |
|            | 2.5m |                                                        |                  |
|            | 3.0m |                                                        |                  |

Comments (if required) :

Pit Stability: Slumps below 1.4m

Groundwater observations: Slow ingress @ 1.6m

Logged by: DIG

Pit Size: 0.4m x 1.8m

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 04**

Client: Nigel Sydell

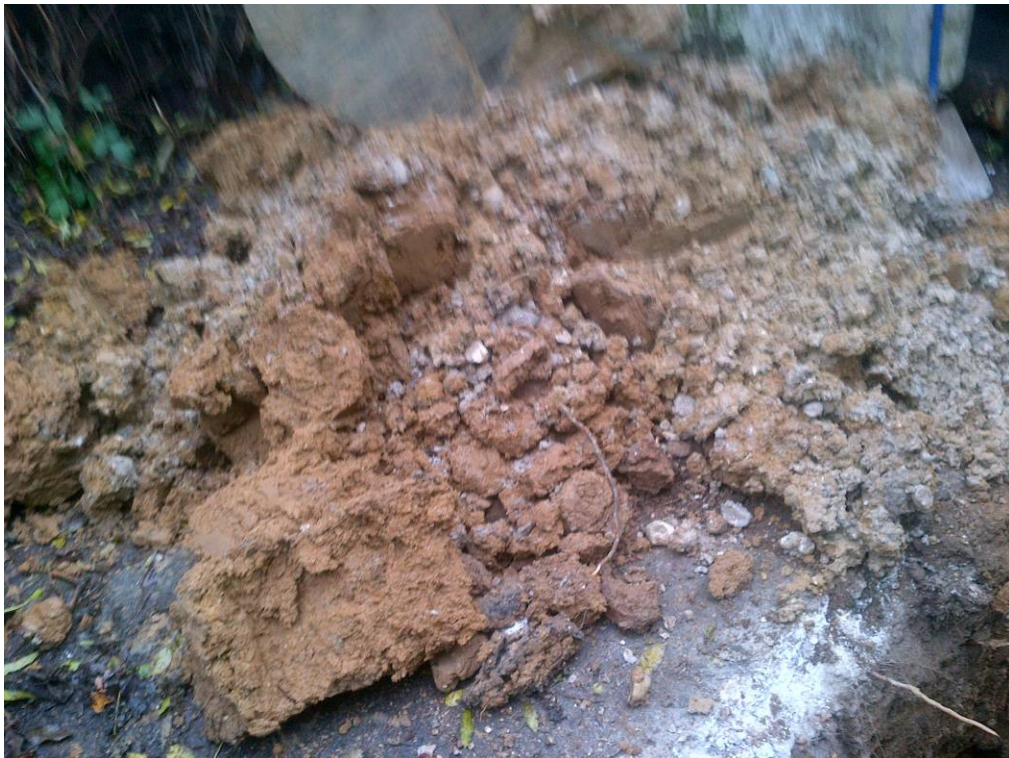
Job No: 517

Date 27 November 2014

Sheet 1 of 2

---

### PHOTOGRAPHS



**TRIAL PIT LOG**

*Dig-Geotech Limited*  
*Geotechnical &*  
*Geoenvironmental Consultants*

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 06**

Client: Nigel Sydell

Job No: 517

Date 27 November 2014

Sheet 1 of 2

| Depth (m)   |      | Strata Description                                                                                                        | Sampling  |
|-------------|------|---------------------------------------------------------------------------------------------------------------------------|-----------|
| GL – 0.18   | 0.0m | Mass concrete                                                                                                             | 0.25 J    |
| 0.18 – 0.30 |      | Black & dark grey / olive green sandy SILT                                                                                |           |
| 0.3 – 1.1   |      | Firm light brown SILT.                                                                                                    |           |
|             | 0.5m |                                                                                                                           | 0.5 D     |
|             |      | ...pale brown below 0.6m                                                                                                  | 0.75 D, J |
|             |      | ...stiff below 0.9m                                                                                                       | 1.0 D     |
|             | 1.0m |                                                                                                                           |           |
| 1.1 – 1.4   |      | Light brown sub-angular medium to coarse GRAVEL in matrix of stiff brown silty clay.( Hogging). Slight hydrocarbon odour. | 1.2 J     |
|             |      |                                                                                                                           |           |
| 1.4 – 1.8   | 1.5m | Light brown & grey SAND and GRAVEL.                                                                                       | 1.5 D     |
|             |      |                                                                                                                           |           |
| 1.8 – 2.0   |      | Grading to orange SAND with occasional rounded gravel                                                                     | 2.0 D     |
|             |      |                                                                                                                           |           |
|             | 2.0m | <b>End of Pit 2.0m</b>                                                                                                    |           |
|             |      |                                                                                                                           |           |
|             |      |                                                                                                                           |           |
|             | 2.5m |                                                                                                                           |           |
|             |      |                                                                                                                           |           |
|             |      |                                                                                                                           |           |
|             | 3.0m |                                                                                                                           |           |

Comments (if required) :

Pit Stability: Slumps below 1.4m

Groundwater observations: Strong seepage @ 1.9m

Logged by: DIG

Pit Size: 0.4m x 1.8m

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 06**

Client: Nigel Sydell

Job No: 517

Date 27 November 2014

Sheet 1 of 2

---

### PHOTOGRAPHS



# TRIAL PIT LOG

*Dig-Geotech Limited  
Geotechnical &  
Geoenvironmental Consultants*

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 07**

Client: Nigel Sydel

Job No: 517

Date 27 November 2014

Sheet 1 of 2

| Depth (m)   |      | Strata Description                                                                                            | Sampling       |
|-------------|------|---------------------------------------------------------------------------------------------------------------|----------------|
| GL – 0.15   | 0.0m | Broken concrete                                                                                               | 0.30 D, J      |
| 0.25 – 0.40 |      | Firm light brown mottled orange & grey SILT with many roots.                                                  |                |
| 0.4 – 0.70  | 0.5m | Black & olive grey / green SAND. Hydrocarbon odour                                                            | 0.4 J<br>0.5 D |
| 0.7 -1.0    |      | Firm brown mottled grey SILT with occasional medium to coarse rounded (white) gravel. (possible Made Ground). | 0.8 D J        |
| 1.0 - 1.05  | 1.0m | Grey SAND & fine to coarse gravel.                                                                            | 1.0 D, J       |
|             |      | <i>Pit collapse at 1.0m depth</i>                                                                             |                |
|             |      | <b>End of Pit 1.0m</b>                                                                                        |                |
|             | 1.5m |                                                                                                               |                |
|             | 2.0m |                                                                                                               |                |
|             | 2.5m |                                                                                                               |                |
|             | 3.0m |                                                                                                               |                |

Comments (if required) :

*Pit collapse at 1.0m depth. Pit abandoned. Cast iron pipe visible to NW corner of pit.*

Pit Stability: Collapse from 0.5m @ 1.0m

Groundwater observations: Seepage 1.0m depth

Logged by: DIG

Pit Size: 0.5m x 2.0m

Site name: 58-64 Station Rd, Hayling Island

Trial Pit No: **TP 07**

Client: Nigel Sydell

Job No: 517

Date 27 November 2014

Sheet 1 of 2

### PHOTOGRAPHS



## **APPENDIX C**

### **LABORATORY TEST RESULTS**



Dr David Grant  
Dig-Geotech Limited  
Southview  
2 Easthams Road  
Crewkerne  
Somerset  
TA18 7AQ



**QTS Environmental Ltd**  
Unit 1  
Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Kent  
ME17 2JN  
t: 01622 850410  
[russell.jarvis@qtsenvironmental.com](mailto:russell.jarvis@qtsenvironmental.com)

## **QTS Environmental Report No: 14-27258**

**Site Reference:** 58 - 64 Station Road, Hayling Island

**Project / Job Ref:** 517

**Order No:** 517/DG/002

**Sample Receipt Date:** 11/12/2014

**Sample Scheduled Date:** 11/12/2014

**Report Issue Number:** 1

**Reporting Date:** 17/12/2014

**Authorised by:**

Russell Jarvis  
Director

**On behalf of QTS Environmental Ltd**

**Authorised by:**

Kevin Old  
Director

**On behalf of QTS Environmental Ltd**



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate                            |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | WS1           | WS1           | WS2           | WS2           | WS3           |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.55          | 1.00          | 0.30          | 1.00          | 0.30          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128944        | 128945        | 128946        | 128947        | 128948        |

| Determinand                       | Unit     | RL    | Accreditation |       |       |       |       |  |
|-----------------------------------|----------|-------|---------------|-------|-------|-------|-------|--|
| Asbestos Screen                   | N/a      | N/a   | ISO17025      |       |       |       |       |  |
| pH                                | pH Units | N/a   | MCERTS        | 9.0   | 8.2   | 8.2   | 7.9   |  |
| Total Cyanide                     | mg/kg    | < 2   | NONE          | < 2   | < 2   | < 2   | < 2   |  |
| Total Sulphate as SO <sub>4</sub> | mg/kg    | < 200 | NONE          | 675   | 226   | 1280  | 427   |  |
| Sulphide                          | mg/kg    | < 5   | NONE          | < 5   | < 5   | < 5   | < 5   |  |
| Total Organic Carbon (TOC)        | %        | < 0.1 | MCERTS        | 0.3   | < 0.1 | 1.1   | 0.4   |  |
| Arsenic (As)                      | mg/kg    | < 2   | MCERTS        | 9     | 9     | 8     | 6     |  |
| W/S Boron                         | mg/kg    | < 1   | NONE          | < 1   | < 1   | 4.1   | 5.9   |  |
| Cadmium (Cd)                      | mg/kg    | < 0.5 | MCERTS        | < 0.5 | < 0.5 | < 0.5 | < 0.5 |  |
| Chromium (Cr)                     | mg/kg    | < 2   | MCERTS        | 34    | 37    | 22    | 39    |  |
| Copper (Cu)                       | mg/kg    | < 4   | MCERTS        | 16    | 18    | 17    | 11    |  |
| Lead (Pb)                         | mg/kg    | < 3   | MCERTS        | 21    | 18    | 66    | 17    |  |
| Mercury (Hg)                      | mg/kg    | < 1   | NONE          | < 1   | < 1   | < 1   | < 1   |  |
| Nickel (Ni)                       | mg/kg    | < 3   | MCERTS        | 27    | 34    | 15    | 30    |  |
| Selenium (Se)                     | mg/kg    | < 3   | NONE          | < 3   | < 3   | < 3   | < 3   |  |
| Zinc (Zn)                         | mg/kg    | < 3   | MCERTS        | 56    | 55    | 57    | 62    |  |
| Total Phenols (monohydric)        | mg/kg    | < 2   | NONE          | < 2   | < 2   | < 2   | < 2   |  |
| EPH (C10 - C40)                   | mg/kg    | < 6   | MCERTS        |       | < 6   |       |       |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C  
Analysis carried out on the dried sample is corrected for the stone content  
The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)  
This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.  
The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.  
Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.  
Asbestos Analyst: Javeed Malik  
RL: Reporting Limit  
Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).  
Subcontracted analysis <sup>(S)</sup>



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate                            |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | WS5           | WS5           | TP02          | TP02          | TP02          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 2.00          | 3.00          | 0.30          | 0.50          | 1.00          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128954        | 128955        | 128956        | 128957        | 128958        |

| Determinand                       | Unit     | RL    | Accreditation |  |  |       |       |       |
|-----------------------------------|----------|-------|---------------|--|--|-------|-------|-------|
| Asbestos Screen                   | N/a      | N/a   | ISO17025      |  |  |       |       |       |
| pH                                | pH Units | N/a   | MCERTS        |  |  | 8.5   | 7.7   | 7.5   |
| Total Cyanide                     | mg/kg    | < 2   | NONE          |  |  | < 2   | 9     | 7     |
| Total Sulphate as SO <sub>4</sub> | mg/kg    | < 200 | NONE          |  |  | 986   | 576   | 539   |
| Sulphide                          | mg/kg    | < 5   | NONE          |  |  | < 5   | < 5   | < 5   |
| Total Organic Carbon (TOC)        | %        | < 0.1 | MCERTS        |  |  | 0.4   | 0.8   | 0.7   |
| Arsenic (As)                      | mg/kg    | < 2   | MCERTS        |  |  | 8     | 9     | 11    |
| W/S Boron                         | mg/kg    | < 1   | NONE          |  |  | 1.4   | < 1   | < 1   |
| Cadmium (Cd)                      | mg/kg    | < 0.5 | MCERTS        |  |  | < 0.5 | < 0.5 | < 0.5 |
| Chromium (Cr)                     | mg/kg    | < 2   | MCERTS        |  |  | 23    | 38    | 41    |
| Copper (Cu)                       | mg/kg    | < 4   | MCERTS        |  |  | 17    | 18    | 15    |
| Lead (Pb)                         | mg/kg    | < 3   | MCERTS        |  |  | 48    | 34    | 33    |
| Mercury (Hg)                      | mg/kg    | < 1   | NONE          |  |  | < 1   | < 1   | < 1   |
| Nickel (Ni)                       | mg/kg    | < 3   | MCERTS        |  |  | 17    | 33    | 34    |
| Selenium (Se)                     | mg/kg    | < 3   | NONE          |  |  | < 3   | < 3   | < 3   |
| Zinc (Zn)                         | mg/kg    | < 3   | MCERTS        |  |  | 99    | 58    | 73    |
| Total Phenols (monohydric)        | mg/kg    | < 2   | NONE          |  |  | < 2   | < 2   | < 2   |
| EPH (C10 - C40)                   | mg/kg    | < 6   | MCERTS        |  |  |       |       | 13    |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C  
Analysis carried out on the dried sample is corrected for the stone content  
The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)  
This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.  
The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.  
Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.  
Asbestos Analyst: Javeed Malik  
RL: Reporting Limit  
Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).  
Subcontracted analysis <sup>(S)</sup>



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate                            |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP03          | TP03          | TP03          | TP04          | TP04          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.30          | 0.50          | 1.00          | 0.15          | 1.00          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128959        | 128960        | 128961        | 129263        | 129264        |

| Determinand                       | Unit     | RL    | Accreditation |       |       |       |              |       |
|-----------------------------------|----------|-------|---------------|-------|-------|-------|--------------|-------|
| Asbestos Screen                   | N/a      | N/a   | ISO17025      |       |       |       | Not Detected |       |
| pH                                | pH Units | N/a   | MCERTS        | 9.5   | 7.5   | 7.3   | 8.8          | 7.6   |
| Total Cyanide                     | mg/kg    | < 2   | NONE          | < 2   | < 2   | < 2   | < 2          | < 2   |
| Total Sulphate as SO <sub>4</sub> | mg/kg    | < 200 | NONE          | 429   | 550   | 317   | 540          | 292   |
| Sulphide                          | mg/kg    | < 5   | NONE          | < 5   | < 5   | < 5   | < 5          | < 5   |
| Total Organic Carbon (TOC)        | %        | < 0.1 | MCERTS        | 0.3   | 0.8   | 0.4   | 1.5          | < 0.1 |
| Arsenic (As)                      | mg/kg    | < 2   | MCERTS        | 5     | 10    | 10    | 8            | 9     |
| W/S Boron                         | mg/kg    | < 1   | NONE          | < 1   | < 1   | < 1   | < 1          | < 1   |
| Cadmium (Cd)                      | mg/kg    | < 0.5 | MCERTS        | < 0.5 | < 0.5 | < 0.5 | < 0.5        | < 0.5 |
| Chromium (Cr)                     | mg/kg    | < 2   | MCERTS        | 8     | 39    | 37    | 21           | 26    |
| Copper (Cu)                       | mg/kg    | < 4   | MCERTS        | 5     | 11    | 18    | 34           | 13    |
| Lead (Pb)                         | mg/kg    | < 3   | MCERTS        | 14    | 22    | 19    | 372          | 19    |
| Mercury (Hg)                      | mg/kg    | < 1   | NONE          | < 1   | < 1   | < 1   | < 1          | < 1   |
| Nickel (Ni)                       | mg/kg    | < 3   | MCERTS        | 6     | 34    | 32    | 16           | 24    |
| Selenium (Se)                     | mg/kg    | < 3   | NONE          | < 3   | < 3   | < 3   | < 3          | < 3   |
| Zinc (Zn)                         | mg/kg    | < 3   | MCERTS        | 28    | 87    | 58    | 169          | 39    |
| Total Phenols (monohydric)        | mg/kg    | < 2   | NONE          | < 2   | < 2   | < 2   | < 2          | < 2   |
| EPH (C10 - C40)                   | mg/kg    | < 6   | MCERTS        |       | < 6   | < 6   |              | < 6   |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C  
Analysis carried out on the dried sample is corrected for the stone content  
The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)  
This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.  
The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.  
Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.  
Asbestos Analyst: Javeed Malik  
RL: Reporting Limit  
Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).  
Subcontracted analysis <sup>(S)</sup>



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate                            |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP06          | TP06          | TP06          | TP07          | TP07          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.15          | 0.75          | 1.20          | 0.40          | 0.80          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 129265        | 129266        | 129267        | 129268        | 129269        |

| Determinand                       | Unit     | RL    | Accreditation |              |       |       |              |       |
|-----------------------------------|----------|-------|---------------|--------------|-------|-------|--------------|-------|
| Asbestos Screen                   | N/a      | N/a   | ISO17025      | Not Detected |       |       | Not Detected |       |
| pH                                | pH Units | N/a   | MCERTS        | 6.6          | 3.6   | 4.5   | 6.0          | 5.6   |
| Total Cyanide                     | mg/kg    | < 2   | NONE          | 15           | 15    | < 2   | 9            | < 2   |
| Total Sulphate as SO <sub>4</sub> | mg/kg    | < 200 | NONE          | 750          | 12650 | 7478  | 500          | < 200 |
| Sulphide                          | mg/kg    | < 5   | NONE          | 5            | < 5   | < 5   | 104          | < 5   |
| Total Organic Carbon (TOC)        | %        | < 0.1 | MCERTS        | 0.8          | 0.4   | 0.1   | 0.7          | 0.3   |
| Arsenic (As)                      | mg/kg    | < 2   | MCERTS        | 9            | 8     | 4     | 8            | 5     |
| W/S Boron                         | mg/kg    | < 1   | NONE          | 2.3          | 1.1   | < 1   | 4.2          | < 1   |
| Cadmium (Cd)                      | mg/kg    | < 0.5 | MCERTS        | < 0.5        | < 0.5 | < 0.5 | < 0.5        | < 0.5 |
| Chromium (Cr)                     | mg/kg    | < 2   | MCERTS        | 15           | 34    | 24    | 22           | 16    |
| Copper (Cu)                       | mg/kg    | < 4   | MCERTS        | 17           | 43    | 11    | 42           | 22    |
| Lead (Pb)                         | mg/kg    | < 3   | MCERTS        | 75           | 26    | 14    | 90           | 9     |
| Mercury (Hg)                      | mg/kg    | < 1   | NONE          | < 1          | < 1   | < 1   | < 1          | < 1   |
| Nickel (Ni)                       | mg/kg    | < 3   | MCERTS        | 9            | 18    | 13    | 14           | 12    |
| Selenium (Se)                     | mg/kg    | < 3   | NONE          | < 3          | < 3   | < 3   | < 3          | < 3   |
| Zinc (Zn)                         | mg/kg    | < 3   | MCERTS        | 32           | 59    | 30    | 50           | 30    |
| Total Phenols (monohydric)        | mg/kg    | < 2   | NONE          | < 2          | < 2   | < 2   | < 2          | < 2   |
| EPH (C10 - C40)                   | mg/kg    | < 6   | MCERTS        |              |       | < 6   |              |       |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C

Analysis carried out on the dried sample is corrected for the stone content

The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)

This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.

The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.

Asbestos Analyst: Javeed Malik

RL: Reporting Limit

Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).

Subcontracted analysis <sup>(S)</sup>



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate                            |                 |               |               |               |               |  |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|--|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |  |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied |  |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP07          | TP11          | TP11          | TP11          |  |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied |  |
| Order No: 517/DG/002                                 | Depth (m)       | 1.00          | 0.50          | 1.00          | 2.00          |  |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 129270        | 129271        | 129272        | 129273        |  |

| Determinand                       | Unit     | RL    | Accreditation |       |  |  |
|-----------------------------------|----------|-------|---------------|-------|--|--|
| Asbestos Screen                   | N/a      | N/a   | ISO17025      |       |  |  |
| pH                                | pH Units | N/a   | MCERTS        | 5.4   |  |  |
| Total Cyanide                     | mg/kg    | < 2   | NONE          | < 2   |  |  |
| Total Sulphate as SO <sub>4</sub> | mg/kg    | < 200 | NONE          | 303   |  |  |
| Sulphide                          | mg/kg    | < 5   | NONE          | < 5   |  |  |
| Total Organic Carbon (TOC)        | %        | < 0.1 | MCERTS        | 0.2   |  |  |
| Arsenic (As)                      | mg/kg    | < 2   | MCERTS        | < 2   |  |  |
| W/S Boron                         | mg/kg    | < 1   | NONE          | < 1   |  |  |
| Cadmium (Cd)                      | mg/kg    | < 0.5 | MCERTS        | < 0.5 |  |  |
| Chromium (Cr)                     | mg/kg    | < 2   | MCERTS        | 9     |  |  |
| Copper (Cu)                       | mg/kg    | < 4   | MCERTS        | 8     |  |  |
| Lead (Pb)                         | mg/kg    | < 3   | MCERTS        | 6     |  |  |
| Mercury (Hg)                      | mg/kg    | < 1   | NONE          | < 1   |  |  |
| Nickel (Ni)                       | mg/kg    | < 3   | MCERTS        | 5     |  |  |
| Selenium (Se)                     | mg/kg    | < 3   | NONE          | < 3   |  |  |
| Zinc (Zn)                         | mg/kg    | < 3   | MCERTS        | 18    |  |  |
| Total Phenols (monohydric)        | mg/kg    | < 2   | NONE          | < 2   |  |  |
| EPH (C10 - C40)                   | mg/kg    | < 6   | MCERTS        |       |  |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C  
Analysis carried out on the dried sample is corrected for the stone content  
The samples have been examined to identify the presence of asbestiform minerals by polarising light microscopy and dispersion staining technique to In-House Procedures QTSE600 Determination of Asbestos in Bulk Materials; Asbestos in Soils/Sediments (fibre screening and identification)  
This report refers to samples as received, and QTS Environmental Ltd, takes no responsibility for the accuracy or competence of sampling by others.  
The material description shall be regarded as tentative and is not included in our scope of UKAS Accreditation.  
Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.  
Asbestos Analyst: Javeed Malik  
RL: Reporting Limit  
Pinch Test: Where pinch test is positive it is reported "Loose Fibres - PT" with type(s).  
Subcontracted analysis <sup>(S)</sup>



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - Speciated PAHs           |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | WS1           | WS1           | WS2           | WS2           | WS3           |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.55          | 1.00          | 0.30          | 1.00          | 0.30          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128944        | 128945        | 128946        | 128947        | 128948        |

| Determinand            | Unit  | RL    | Accreditation |       |       |       |       |  |
|------------------------|-------|-------|---------------|-------|-------|-------|-------|--|
| Naphthalene            | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Acenaphthylene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Acenaphthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Fluorene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Phenanthrene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Anthracene             | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Fluoranthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Pyrene                 | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Benzo(a)anthracene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Chrysene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Benzo(b)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Benzo(k)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Benzo(a)pyrene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Dibenz(a,h)anthracene  | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Benzo(ghi)perylene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 |  |
| Total EPA-16 PAHs      | mg/kg | < 1.6 | MCERTS        | < 1.6 | < 1.6 | < 1.6 | < 1.6 |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - Speciated PAHs           |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | WS5           | WS5           | TP02          | TP02          | TP02          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 2.00          | 3.00          | 0.30          | 0.50          | 1.00          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128954        | 128955        | 128956        | 128957        | 128958        |

| Determinand            | Unit  | RL    | Accreditation |  |       |       |       |
|------------------------|-------|-------|---------------|--|-------|-------|-------|
| Naphthalene            | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthylene         | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthene           | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Fluorene               | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Phenanthrene           | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Anthracene             | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Fluoranthene           | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Pyrene                 | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Benzo(a)anthracene     | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Chrysene               | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Benzo(b)fluoranthene   | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Benzo(k)fluoranthene   | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Benzo(a)pyrene         | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Dibenz(a,h)anthracene  | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Benzo(ghi)perylene     | mg/kg | < 0.1 | MCERTS        |  | < 0.1 | < 0.1 | < 0.1 |
| Total EPA-16 PAHs      | mg/kg | < 1.6 | MCERTS        |  | < 1.6 | < 1.6 | < 1.6 |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - Speciated PAHs           |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP03          | TP03          | TP03          | TP04          | TP04          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.30          | 0.50          | 1.00          | 0.15          | 1.00          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128959        | 128960        | 128961        | 129263        | 129264        |

| Determinand            | Unit  | RL    | Accreditation |       |       |       |       |       |
|------------------------|-------|-------|---------------|-------|-------|-------|-------|-------|
| Naphthalene            | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthylene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Fluorene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Phenanthrene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 1.43  | < 0.1 |
| Anthracene             | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 0.26  | < 0.1 |
| Fluoranthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 2.72  | < 0.1 |
| Pyrene                 | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 2.27  | < 0.1 |
| Benzo(a)anthracene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 1.12  | < 0.1 |
| Chrysene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 1.21  | < 0.1 |
| Benzo(b)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 1.19  | < 0.1 |
| Benzo(k)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 0.45  | < 0.1 |
| Benzo(a)pyrene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 0.85  | < 0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 0.55  | < 0.1 |
| Dibenz(a,h)anthracene  | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(ghi)perylene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 0.45  | < 0.1 |
| Total EPA-16 PAHs      | mg/kg | < 1.6 | MCERTS        | < 1.6 | < 1.6 | < 1.6 | 12.5  | < 1.6 |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - Speciated PAHs           |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP06          | TP06          | TP06          | TP07          | TP07          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.15          | 0.75          | 1.20          | 0.40          | 0.80          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 129265        | 129266        | 129267        | 129268        | 129269        |

| Determinand            | Unit  | RL    | Accreditation |       |       |       |       |       |
|------------------------|-------|-------|---------------|-------|-------|-------|-------|-------|
| Naphthalene            | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthylene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Acenaphthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Fluorene               | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 0.22  | < 0.1 |
| Phenanthrene           | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | 0.53  | < 0.1 |
| Anthracene             | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Fluoranthene           | mg/kg | < 0.1 | MCERTS        | 0.38  | < 0.1 | < 0.1 | 0.20  | < 0.1 |
| Pyrene                 | mg/kg | < 0.1 | MCERTS        | 0.27  | < 0.1 | < 0.1 | 0.17  | < 0.1 |
| Benzo(a)anthracene     | mg/kg | < 0.1 | MCERTS        | 0.18  | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Chrysene               | mg/kg | < 0.1 | MCERTS        | 0.31  | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(b)fluoranthene   | mg/kg | < 0.1 | MCERTS        | 0.31  | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(k)fluoranthene   | mg/kg | < 0.1 | MCERTS        | 0.13  | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(a)pyrene         | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Dibenz(a,h)anthracene  | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Benzo(ghi)perylene     | mg/kg | < 0.1 | MCERTS        | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Total EPA-16 PAHs      | mg/kg | < 1.6 | MCERTS        | < 1.6 | < 1.6 | < 1.6 | < 1.6 | < 1.6 |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - Speciated PAHs           |                 |               |               |               |               |  |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|--|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |  |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied |  |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP07          | TP11          | TP11          | TP11          |  |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied |  |
| Order No: 517/DG/002                                 | Depth (m)       | 1.00          | 0.50          | 1.00          | 2.00          |  |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 129270        | 129271        | 129272        | 129273        |  |

| Determinand            | Unit  | RL    | Accreditation |       |  |  |
|------------------------|-------|-------|---------------|-------|--|--|
| Naphthalene            | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Acenaphthylene         | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Acenaphthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Fluorene               | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Phenanthrene           | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Anthracene             | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Fluoranthene           | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Pyrene                 | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Benzo(a)anthracene     | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Chrysene               | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Benzo(b)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Benzo(k)fluoranthene   | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Benzo(a)pyrene         | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Indeno(1,2,3-cd)pyrene | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Dibenz(a,h)anthracene  | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Benzo(ghi)perylene     | mg/kg | < 0.1 | MCERTS        | < 0.1 |  |  |
| Total EPA-16 PAHs      | mg/kg | < 1.6 | MCERTS        | < 1.6 |  |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - TPH LQM Banded           |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | WS1           | WS2           | WS2           | WS3           | WS4           |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.55          | 0.30          | 1.00          | 2.00          | 1.00          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128944        | 128946        | 128947        | 128949        | 128951        |

| Determinand          | Unit  | RL     | Accreditation |        |        |        |  |
|----------------------|-------|--------|---------------|--------|--------|--------|--|
| Aliphatic >C5 - C6   | mg/kg | < 0.01 | NONE          | < 0.01 | < 0.01 | < 0.01 |  |
| Aliphatic >C6 - C8   | mg/kg | < 0.05 | NONE          | < 0.05 | < 0.05 | < 0.05 |  |
| Aliphatic >C8 - C10  | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    |  |
| Aliphatic >C10 - C12 | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    |  |
| Aliphatic >C12 - C16 | mg/kg | < 3    | MCERTS        | < 3    | < 3    | < 3    |  |
| Aliphatic >C16 - C35 | mg/kg | < 10   | MCERTS        | 13     | < 10   | < 10   |  |
| Aliphatic >C35 - C44 | mg/kg | < 10   | NONE          | < 10   | 17     | < 10   |  |
| Aliphatic (C5 - C44) | mg/kg | < 30   | NONE          | < 30   | < 30   | < 30   |  |
| Aromatic >C5 - C7    | mg/kg | < 0.01 | NONE          | < 0.01 | < 0.01 | < 0.01 |  |
| Aromatic >C7 - C8    | mg/kg | < 0.05 | NONE          | < 0.05 | < 0.05 | < 0.05 |  |
| Aromatic >C8 - C10   | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    |  |
| Aromatic >C10 - C12  | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    |  |
| Aromatic >C12 - C16  | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    |  |
| Aromatic >C16 - C21  | mg/kg | < 3    | MCERTS        | < 3    | < 3    | < 3    |  |
| Aromatic >C21 - C35  | mg/kg | < 10   | MCERTS        | 27     | < 10   | < 10   |  |
| Aromatic >C35 - C44  | mg/kg | < 10   | NONE          | < 10   | < 10   | < 10   |  |
| Aromatic (>C5 - C44) | mg/kg | < 30   | NONE          | < 30   | < 30   | < 30   |  |
| Total >C5 - C44      | mg/kg | < 60   | NONE          | < 60   | < 60   | < 60   |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - TPH LQM Banded           |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | WS4           | WS5           | WS5           | WS5           | TP02          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 2.00          | 0.50          | 2.00          | 3.00          | 0.30          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128952        | 128953        | 128954        | 128955        | 128956        |

| Determinand          | Unit  | RL     | Accreditation |  |        |
|----------------------|-------|--------|---------------|--|--------|
| Aliphatic >C5 - C6   | mg/kg | < 0.01 | NONE          |  | < 0.01 |
| Aliphatic >C6 - C8   | mg/kg | < 0.05 | NONE          |  | < 0.05 |
| Aliphatic >C8 - C10  | mg/kg | < 2    | MCERTS        |  | < 2    |
| Aliphatic >C10 - C12 | mg/kg | < 2    | MCERTS        |  | < 2    |
| Aliphatic >C12 - C16 | mg/kg | < 3    | MCERTS        |  | < 3    |
| Aliphatic >C16 - C35 | mg/kg | < 10   | MCERTS        |  | 10     |
| Aliphatic >C35 - C44 | mg/kg | < 10   | NONE          |  | 16     |
| Aliphatic (C5 - C44) | mg/kg | < 30   | NONE          |  | < 30   |
| Aromatic >C5 - C7    | mg/kg | < 0.01 | NONE          |  | < 0.01 |
| Aromatic >C7 - C8    | mg/kg | < 0.05 | NONE          |  | < 0.05 |
| Aromatic >C8 - C10   | mg/kg | < 2    | MCERTS        |  | < 2    |
| Aromatic >C10 - C12  | mg/kg | < 2    | MCERTS        |  | < 2    |
| Aromatic >C12 - C16  | mg/kg | < 2    | MCERTS        |  | < 2    |
| Aromatic >C16 - C21  | mg/kg | < 3    | MCERTS        |  | < 3    |
| Aromatic >C21 - C35  | mg/kg | < 10   | MCERTS        |  | < 10   |
| Aromatic >C35 - C44  | mg/kg | < 10   | NONE          |  | < 10   |
| Aromatic (>C5 - C44) | mg/kg | < 30   | NONE          |  | < 30   |
| Total >C5 - C44      | mg/kg | < 60   | NONE          |  | < 60   |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



| Soil Analysis Certificate - TPH LQM Banded           |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP02          | TP03          | TP04          | TP06          | TP06          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.50          | 0.30          | 0.15          | 0.15          | 0.75          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128957        | 128959        | 129263        | 129265        | 129266        |

| Determinand          | Unit  | RL     | Accreditation |        |        |        |        |        |
|----------------------|-------|--------|---------------|--------|--------|--------|--------|--------|
| Aliphatic >C5 - C6   | mg/kg | < 0.01 | NONE          | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aliphatic >C6 - C8   | mg/kg | < 0.05 | NONE          | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aliphatic >C8 - C10  | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    | < 2    | < 2    |
| Aliphatic >C10 - C12 | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    | < 2    | < 2    |
| Aliphatic >C12 - C16 | mg/kg | < 3    | MCERTS        | < 3    | < 3    | < 3    | < 3    | < 3    |
| Aliphatic >C16 - C35 | mg/kg | < 10   | MCERTS        | < 10   | < 10   | < 10   | < 10   | < 10   |
| Aliphatic >C35 - C44 | mg/kg | < 10   | NONE          | < 10   | < 10   | < 10   | < 10   | < 10   |
| Aliphatic (C5 - C44) | mg/kg | < 30   | NONE          | < 30   | < 30   | < 30   | < 30   | < 30   |
| Aromatic >C5 - C7    | mg/kg | < 0.01 | NONE          | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Aromatic >C7 - C8    | mg/kg | < 0.05 | NONE          | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Aromatic >C8 - C10   | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    | < 2    | < 2    |
| Aromatic >C10 - C12  | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    | < 2    | < 2    |
| Aromatic >C12 - C16  | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    | < 2    | < 2    |
| Aromatic >C16 - C21  | mg/kg | < 3    | MCERTS        | < 3    | < 3    | 7      | < 3    | < 3    |
| Aromatic >C21 - C35  | mg/kg | < 10   | MCERTS        | < 10   | < 10   | 16     | < 10   | < 10   |
| Aromatic >C35 - C44  | mg/kg | < 10   | NONE          | < 10   | < 10   | < 10   | < 10   | < 10   |
| Aromatic (>C5 - C44) | mg/kg | < 30   | NONE          | < 30   | < 30   | < 30   | < 30   | < 30   |
| Total >C5 - C44      | mg/kg | < 60   | NONE          | < 60   | < 60   | < 60   | < 60   | < 60   |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



| Soil Analysis Certificate - TPH LQM Banded           |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP07          | TP07          | TP07          | TP11          | TP11          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.40          | 0.80          | 1.00          | 0.50          | 2.00          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 129268        | 129269        | 129270        | 129271        | 129273        |

| Determinand          | Unit  | RL     | Accreditation |        |        |        |  |
|----------------------|-------|--------|---------------|--------|--------|--------|--|
| Aliphatic >C5 - C6   | mg/kg | < 0.01 | NONE          | < 0.01 | < 0.01 | < 0.01 |  |
| Aliphatic >C6 - C8   | mg/kg | < 0.05 | NONE          | < 0.05 | < 0.05 | < 0.05 |  |
| Aliphatic >C8 - C10  | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    |  |
| Aliphatic >C10 - C12 | mg/kg | < 2    | MCERTS        | 3      | < 2    | < 2    |  |
| Aliphatic >C12 - C16 | mg/kg | < 3    | MCERTS        | 10     | < 3    | < 3    |  |
| Aliphatic >C16 - C35 | mg/kg | < 10   | MCERTS        | < 10   | < 10   | < 10   |  |
| Aliphatic >C35 - C44 | mg/kg | < 10   | NONE          | < 10   | < 10   | < 10   |  |
| Aliphatic (C5 - C44) | mg/kg | < 30   | NONE          | < 30   | < 30   | < 30   |  |
| Aromatic >C5 - C7    | mg/kg | < 0.01 | NONE          | < 0.01 | < 0.01 | < 0.01 |  |
| Aromatic >C7 - C8    | mg/kg | < 0.05 | NONE          | < 0.05 | < 0.05 | < 0.05 |  |
| Aromatic >C8 - C10   | mg/kg | < 2    | MCERTS        | < 2    | < 2    | < 2    |  |
| Aromatic >C10 - C12  | mg/kg | < 2    | MCERTS        | 6      | < 2    | < 2    |  |
| Aromatic >C12 - C16  | mg/kg | < 2    | MCERTS        | 37     | < 2    | < 2    |  |
| Aromatic >C16 - C21  | mg/kg | < 3    | MCERTS        | 29     | < 3    | < 3    |  |
| Aromatic >C21 - C35  | mg/kg | < 10   | MCERTS        | < 10   | < 10   | < 10   |  |
| Aromatic >C35 - C44  | mg/kg | < 10   | NONE          | < 10   | < 10   | < 10   |  |
| Aromatic (>C5 - C44) | mg/kg | < 30   | NONE          | 72     | < 30   | < 30   |  |
| Total >C5 - C44      | mg/kg | < 60   | NONE          | 85     | < 60   | < 60   |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - BTEX / MTBE              |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | WS1           | WS2           | WS2           | WS3           | WS4           |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.55          | 0.30          | 1.00          | 2.00          | 1.00          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128944        | 128946        | 128947        | 128949        | 128951        |

| Determinand  | Unit  | RL   | Accreditation |      |      |      |  |
|--------------|-------|------|---------------|------|------|------|--|
| Benzene      | ug/kg | < 2  | MCERTS        | < 2  | < 2  | < 2  |  |
| Toluene      | ug/kg | < 5  | MCERTS        | < 5  | < 5  | < 5  |  |
| Ethylbenzene | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 |  |
| p & m-xylene | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 |  |
| o-xylene     | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 |  |
| MTBE         | ug/kg | < 5  | MCERTS        | < 5  | < 5  | < 5  |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - BTEX / MTBE              |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | WS4           | WS5           | WS5           | WS5           | TP02          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 2.00          | 0.50          | 2.00          | 3.00          | 0.30          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128952        | 128953        | 128954        | 128955        | 128956        |

| Determinand  | Unit  | RL   | Accreditation |  |      |
|--------------|-------|------|---------------|--|------|
| Benzene      | ug/kg | < 2  | MCERTS        |  | < 2  |
| Toluene      | ug/kg | < 5  | MCERTS        |  | < 5  |
| Ethylbenzene | ug/kg | < 10 | MCERTS        |  | < 10 |
| p & m-xylene | ug/kg | < 10 | MCERTS        |  | < 10 |
| o-xylene     | ug/kg | < 10 | MCERTS        |  | < 10 |
| MTBE         | ug/kg | < 5  | MCERTS        |  | < 5  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



| Soil Analysis Certificate - BTEX / MTBE              |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP02          | TP03          | TP04          | TP06          | TP06          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.50          | 0.30          | 0.15          | 0.15          | 0.75          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 128957        | 128959        | 129263        | 129265        | 129266        |

| Determinand  | Unit  | RL   | Accreditation |      |      |      |      |      |
|--------------|-------|------|---------------|------|------|------|------|------|
| Benzene      | ug/kg | < 2  | MCERTS        | < 2  | < 2  | < 2  | < 2  | < 2  |
| Toluene      | ug/kg | < 5  | MCERTS        | < 5  | < 5  | < 5  | < 5  | < 5  |
| Ethylbenzene | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 | < 10 | < 10 |
| p & m-xylene | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 | < 10 | < 10 |
| o-xylene     | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 | < 10 | < 10 |
| MTBE         | ug/kg | < 5  | MCERTS        | < 5  | < 5  | < 5  | < 5  | < 5  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - BTEX / MTBE              |                 |               |               |               |               |               |
|------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                  | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island | TP / BH No      | TP07          | TP07          | TP07          | TP11          | TP11          |
| Project / Job Ref: 517                               | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                 | Depth (m)       | 0.40          | 0.80          | 1.00          | 0.50          | 2.00          |
| Reporting Date: 17/12/2014                           | QTSE Sample No  | 129268        | 129269        | 129270        | 129271        | 129273        |

| Determinand  | Unit  | RL   | Accreditation |      |      |      |  |
|--------------|-------|------|---------------|------|------|------|--|
| Benzene      | ug/kg | < 2  | MCERTS        | < 2  | < 2  | < 2  |  |
| Toluene      | ug/kg | < 5  | MCERTS        | < 5  | < 5  | < 5  |  |
| Ethylbenzene | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 |  |
| p & m-xylene | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 |  |
| o-xylene     | ug/kg | < 10 | MCERTS        | < 10 | < 10 | < 10 |  |
| MTBE         | ug/kg | < 5  | MCERTS        | < 5  | < 5  | < 5  |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - Volatile Organic Compounds (VOC) |                 |               |               |               |               |               |
|--------------------------------------------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| QTS Environmental Report No: 14-27258                        | Date Sampled    | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      | 27/11/14      |
| Dig-Geotech Limited                                          | Time Sampled    | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Site Reference: 58 - 64 Station Road, Hayling Island         | TP / BH No      | WS5           | WS5           | TP02          | TP03          | TP07          |
| Project / Job Ref: 517                                       | Additional Refs | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Order No: 517/DG/002                                         | Depth (m)       | 2.00          | 3.00          | 0.30          | 0.30          | 0.40          |
| Reporting Date: 17/12/2014                                   | QTSE Sample No  | 128954        | 128955        | 128956        | 128959        | 129268        |

| Determinand                 | Unit  | RL   | Accreditation |  |      |      |      |
|-----------------------------|-------|------|---------------|--|------|------|------|
| Dichlorodifluoromethane     | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Vinyl Chloride              | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Chloromethane               | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| Chloroethane                | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Bromomethane                | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| Trichlorofluoromethane      | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,1-Dichloroethene          | ug/kg | < 5  | ISO17025      |  | < 5  | < 5  | < 5  |
| MTBE                        | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| trans-1,2-Dichloroethene    | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,1-Dichloroethane          | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| cis-1,2-Dichloroethene      | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 2,2-Dichloropropane         | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Chloroform                  | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Bromochloromethane          | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,1,1-Trichloroethane       | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,1-Dichloropropene         | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| Carbon Tetrachloride        | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,2-Dichloroethane          | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Benzene                     | ug/kg | < 2  | MCERTS        |  | < 2  | < 2  | < 2  |
| 1,2-Dichloropropane         | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Trichloroethene             | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Bromodichloromethane        | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Dibromomethane              | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| TAME                        | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| cis-1,3-Dichloropropene     | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Toluene                     | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| trans-1,3-Dichloropropene   | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,1,2-Trichloroethane       | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| 1,3-Dichloropropane         | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Tetrachloroethene           | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Dibromochloromethane        | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,2-Dibromoethane           | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Chlorobenzene               | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,1,1,2-Tetrachloroethane   | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Ethyl Benzene               | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| m,p-Xylene                  | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| o-Xylene                    | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| Styrene                     | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| Bromoform                   | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| Isopropylbenzene            | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | 8    |
| 1,1,2,2-Tetrachloroethane   | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,2,3-Trichloropropane      | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| n-Propylbenzene             | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | 22   |
| Bromobenzene                | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 2-Chlorotoluene             | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,3,5-Trimethylbenzene      | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 4-Chlorotoluene             | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| tert-Butylbenzene           | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,2,4-Trimethylbenzene      | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | 83   |
| sec-Butylbenzene            | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | 108  |
| p-Isopropyltoluene          | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | 20   |
| 1,3-Dichlorobenzene         | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,4-Dichlorobenzene         | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| n-Butylbenzene              | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | 159  |
| 1,2-Dichlorobenzene         | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |
| 1,2-Dibromo-3-chloropropane | ug/kg | < 10 | MCERTS        |  | < 10 | < 10 | < 10 |
| Hexachlorobutadiene         | ug/kg | < 5  | MCERTS        |  | < 5  | < 5  | < 5  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



QTS Environmental Ltd  
Unit 1, Rose Lane Industrial Estate  
Rose Lane  
Lenham Heath  
Maidstone  
Kent ME17 2JN  
Tel : 01622 850410



| Soil Analysis Certificate - Volatile Organic Compounds (VOC) |                 |               |  |  |  |  |
|--------------------------------------------------------------|-----------------|---------------|--|--|--|--|
| QTS Environmental Report No: 14-27258                        | Date Sampled    | 27/11/14      |  |  |  |  |
| Dig-Geotech Limited                                          | Time Sampled    | None Supplied |  |  |  |  |
| Site Reference: 58 - 64 Station Road, Hayling Island         | TP / BH No      | TP07          |  |  |  |  |
| Project / Job Ref: 517                                       | Additional Refs | None Supplied |  |  |  |  |
| Order No: 517/DG/002                                         | Depth (m)       | 0.80          |  |  |  |  |
| Reporting Date: 17/12/2014                                   | QTSE Sample No  | 129269        |  |  |  |  |

| Determinand                 | Unit  | RL   | Accreditation |      |  |  |  |
|-----------------------------|-------|------|---------------|------|--|--|--|
| Dichlorodifluoromethane     | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Vinyl Chloride              | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Chloromethane               | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| Chloroethane                | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Bromomethane                | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| Trichlorofluoromethane      | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,1-Dichloroethene          | ug/kg | < 5  | ISO17025      | < 5  |  |  |  |
| MTBE                        | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| trans-1,2-Dichloroethene    | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,1-Dichloroethane          | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| cis-1,2-Dichloroethene      | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 2,2-Dichloropropane         | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Chloroform                  | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Bromochloromethane          | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,1,1-Trichloroethane       | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,1-Dichloropropene         | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| Carbon Tetrachloride        | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,2-Dichloroethane          | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Benzene                     | ug/kg | < 2  | MCERTS        | < 2  |  |  |  |
| 1,2-Dichloropropane         | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Trichloroethene             | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Bromodichloromethane        | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Dibromomethane              | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| TAME                        | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| cis-1,3-Dichloropropene     | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Toluene                     | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| trans-1,3-Dichloropropene   | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,1,2-Trichloroethane       | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| 1,3-Dichloropropane         | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Tetrachloroethene           | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Dibromochloromethane        | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,2-Dibromoethane           | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Chlorobenzene               | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,1,1,2-Tetrachloroethane   | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Ethyl Benzene               | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| m,p-Xylene                  | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| o-Xylene                    | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| Styrene                     | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Bromoform                   | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| Isopropylbenzene            | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,1,2,2-Tetrachloroethane   | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,2,3-Trichloropropane      | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| n-Propylbenzene             | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| Bromobenzene                | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 2-Chlorotoluene             | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,3,5-Trimethylbenzene      | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 4-Chlorotoluene             | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| tert-Butylbenzene           | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,2,4-Trimethylbenzene      | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| sec-Butylbenzene            | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| p-Isopropyltoluene          | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,3-Dichlorobenzene         | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,4-Dichlorobenzene         | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| n-Butylbenzene              | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,2-Dichlorobenzene         | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |
| 1,2-Dibromo-3-chloropropane | ug/kg | < 10 | MCERTS        | < 10 |  |  |  |
| Hexachlorobutadiene         | ug/kg | < 5  | MCERTS        | < 5  |  |  |  |

Analytical results are expressed on a dry weight basis where samples are dried at less than 30°C



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



| Soil Analysis Certificate - Sample Descriptions      |  |
|------------------------------------------------------|--|
| QTS Environmental Report No: 14-27258                |  |
| Dig-Geotech Limited                                  |  |
| Site Reference: 58 - 64 Station Road, Hayling Island |  |
| Project / Job Ref: 517                               |  |
| Order No: 517/DG/002                                 |  |
| Reporting Date: 17/12/2014                           |  |

| QTSE Sample No | TP / BH No | Additional Refs | Depth (m) | Moisture Content (%) | Sample Matrix Description                         |
|----------------|------------|-----------------|-----------|----------------------|---------------------------------------------------|
| \$ 128944      | WS1        | None Supplied   | 0.55      | 18.5                 | Orange clay                                       |
| &\$ 128945     | WS1        | None Supplied   | 1.00      | 18.3                 | Light brown clay                                  |
| \$ 128946      | WS2        | None Supplied   | 0.30      | 16                   | Brown clayey gravel with rubble                   |
| &\$ 128947     | WS2        | None Supplied   | 1.00      | 17.2                 | Brown clay                                        |
| &\$ 128948     | WS3        | None Supplied   | 0.30      | 14.8                 | Grey clayey gravel with rubble                    |
| &\$ 128949     | WS3        | None Supplied   | 2.00      | 13.7                 | Light brown sand with stones                      |
| &\$ 128950     | WS4        | None Supplied   | 0.20      | 12.6                 | Grey sandy gravel with concrete and rubble        |
| &\$ 128951     | WS4        | None Supplied   | 1.00      | 14.7                 | Brown clayey gravel with rubble                   |
| \$ 128952      | WS4        | None Supplied   | 2.00      | 17                   | Black clayey gravel with rubble and tar           |
| &\$ 128953     | WS5        | None Supplied   | 0.50      | 20.5                 | Brown clay                                        |
| \$ 128954      | WS5        | None Supplied   | 2.00      | 9.5                  | Grey sandy clay with stones                       |
| \$ 128955      | WS5        | None Supplied   | 3.00      | 18                   | Grey sandy clay                                   |
| &\$ 128956     | TP02       | None Supplied   | 0.30      | 21.5                 | Light brown clayey gravel with stones             |
| &\$ 128957     | TP02       | None Supplied   | 0.50      | 21.4                 | Light brown clay                                  |
| &\$ 128958     | TP02       | None Supplied   | 1.00      | 20.8                 | Light brown clay                                  |
| &\$ 128959     | TP03       | None Supplied   | 0.30      | 7.3                  | Grey sandy gravel with stones                     |
| &\$ 128960     | TP03       | None Supplied   | 0.50      | 19                   | Light brown loamy clay                            |
| &\$ 128961     | TP03       | None Supplied   | 1.00      | 15.4                 | Light brown clay                                  |
| &\$ 129263     | TP04       | None Supplied   | 0.15      | 19.5                 | Brown clayey loam with vegetation                 |
| &\$ 129264     | TP04       | None Supplied   | 1.00      | 15.5                 | Light grey clay with vegetation                   |
| &\$ 129265     | TP06       | None Supplied   | 0.15      | 19                   | Brown clayey loam                                 |
| &\$ 129266     | TP06       | None Supplied   | 0.75      | 25.5                 | Light brown clay with stones                      |
| &\$ 129267     | TP06       | None Supplied   | 1.20      | 18.2                 | Light brown clay with stones                      |
| &\$ 129268     | TP07       | None Supplied   | 0.40      | 23.9                 | Black clay                                        |
| &\$ 129269     | TP07       | None Supplied   | 0.80      | 15.1                 | Light brown clay with stones                      |
| &\$ 129270     | TP07       | None Supplied   | 1.00      | 9.8                  | Light brown clayey sand with stones               |
| &\$ 129271     | TP11       | None Supplied   | 0.50      | 18.5                 | Brown clayey loam                                 |
| &\$ 129272     | TP11       | None Supplied   | 1.00      | 17                   | Brown clayey loam with stones and oil / petroleum |
| &\$ 129273     | TP11       | None Supplied   | 2.00      | 11.2                 | Light brown clayey sand with stones               |

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample <sup>1/5</sup>

& samples received in inappropriate containers for hydrocarbon analysis

\$ samples exceeded recommended holding times



**QTS Environmental Ltd**  
**Unit 1, Rose Lane Industrial Estate**  
**Rose Lane**  
**Lenham Heath**  
**Maidstone**  
**Kent ME17 2JN**  
**Tel : 01622 850410**



| Soil Analysis Certificate - Methodology & Miscellaneous Information |  |
|---------------------------------------------------------------------|--|
| QTS Environmental Report No: 14-27258                               |  |
| Dig-Geotech Limited                                                 |  |
| Site Reference: 58 - 64 Station Road, Hayling Island                |  |
| Project / Job Ref: 517                                              |  |
| Order No: 517/DG/002                                                |  |
| Reporting Date: 17/12/2014                                          |  |

| Matrix | Analysed On | Determinand                             | Brief Method Description                                                                                                                             | Method No |
|--------|-------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Soil   | D           | Boron - Water Soluble                   | Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES                                                            | E012      |
| Soil   | AR          | BTEX                                    | Determination of BTEX by headspace GC-MS                                                                                                             | E001      |
| Soil   | D           | Cations                                 | Determination of cations in soil by aqua-regia digestion followed by ICP-OES                                                                         | E002      |
| Soil   | D           | Chloride - Water Soluble (2:1)          | Determination of chloride by extraction with water & analysed by ion chromatography                                                                  | E009      |
| Soil   | AR          | Chromium - Hexavalent                   | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry | E016      |
| Soil   | AR          | Cyanide - Complex                       | Determination of complex cyanide by distillation followed by colorimetry                                                                             | E015      |
| Soil   | AR          | Cyanide - Free                          | Determination of free cyanide by distillation followed by colorimetry                                                                                | E015      |
| Soil   | AR          | Cyanide - Total                         | Determination of total cyanide by distillation followed by colorimetry                                                                               | E015      |
| Soil   | D           | Cyclohexane Extractable Matter (CEM)    | Gravimetrically determined through extraction with cyclohexane                                                                                       | E011      |
| Soil   | AR          | Diesel Range Organics (C10 - C24)       | Determination of hexane/acetone extractable hydrocarbons by GC-FID                                                                                   | E004      |
| Soil   | AR          | Electrical Conductivity                 | Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement                             | E022      |
| Soil   | AR          | Electrical Conductivity                 | Determination of electrical conductivity by addition of water followed by electrometric measurement                                                  | E023      |
| Soil   | D           | Elemental Sulphur                       | Determination of elemental sulphur by solvent extraction followed by GC-MS                                                                           | E020      |
| Soil   | AR          | EPH (C10 - C40)                         | Determination of acetone/hexane extractable hydrocarbons by GC-FID                                                                                   | E004      |
| Soil   | AR          | EPH Product ID                          | Determination of acetone/hexane extractable hydrocarbons by GC-FID                                                                                   | E004      |
| Soil   | AR          | EPH TEXAS                               | Determination of acetone/hexane extractable hydrocarbons by GC-FID                                                                                   | E004      |
| Soil   | D           | Fluoride - Water Soluble                | Determination of Fluoride by extraction with water & analysed by ion chromatography                                                                  | E009      |
| Soil   | D           | FOC (Fraction Organic Carbon)           | Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate                     | E010      |
| Soil   | D           | Loss on Ignition @ 450oC                | Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace                                       | E019      |
| Soil   | D           | Magnesium - Water Soluble               | Determination of water soluble magnesium by extraction with water followed by ICP-OES                                                                | E025      |
| Soil   | D           | Metals                                  | Determination of metals by aqua-regia digestion followed by ICP-OES                                                                                  | E002      |
| Soil   | AR          | Mineral Oil (C10 - C40)                 | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge                                                  | E004      |
| Soil   | AR          | Moisture Content                        | Moisture content; determined gravimetrically                                                                                                         | E003      |
| Soil   | D           | Nitrate - Water Soluble (2:1)           | Determination of nitrate by extraction with water & analysed by ion chromatography                                                                   | E009      |
| Soil   | D           | Organic Matter                          | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate                                 | E010      |
| Soil   | AR          | PAH - Speciated (EPA 16)                | Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards                | E005      |
| Soil   | AR          | PCB - 7 Congeners                       | Determination of PCB by extraction with acetone and hexane followed by GC-MS                                                                         | E008      |
| Soil   | D           | Petroleum Ether Extract (PEE)           | Gravimetrically determined through extraction with petroleum ether                                                                                   | E011      |
| Soil   | AR          | pH                                      | Determination of pH by addition of water followed by electrometric measurement                                                                       | E007      |
| Soil   | AR          | Phenols - Total (monohydric)            | Determination of phenols by distillation followed by colorimetry                                                                                     | E021      |
| Soil   | D           | Phosphate - Water Soluble (2:1)         | Determination of phosphate by extraction with water & analysed by ion chromatography                                                                 | E009      |
| Soil   | D           | Sulphate (as SO4) - Total               | Determination of total sulphate by extraction with 10% HCl followed by ICP-OES                                                                       | E013      |
| Soil   | D           | Sulphate (as SO4) - Water Soluble (2:1) | Determination of sulphate by extraction with water & analysed by ion chromatography                                                                  | E009      |
| Soil   | D           | Sulphate (as SO4) - Water Soluble (2:1) | Determination of water soluble sulphate by extraction with water followed by ICP-OES                                                                 | E014      |
| Soil   | AR          | Sulphide                                | Determination of sulphide by distillation followed by colorimetry                                                                                    | E018      |
| Soil   | D           | Sulphur - Total                         | Determination of total sulphur by extraction with aqua-regia followed by ICP-OES                                                                     | E024      |
| Soil   | AR          | SVOC                                    | Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS                                               | E006      |
| Soil   | AR          | Thiocyanate (as SCN)                    | Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry  | E017      |
| Soil   | D           | Toluene Extractable Matter (TEM)        | Gravimetrically determined through extraction with toluene                                                                                           | E011      |
| Soil   | D           | Total Organic Carbon (TOC)              | Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate                                 | E010      |
| Soil   | AR          | TPH CWG                                 | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge                                                  | E004      |
| Soil   | AR          | TPH LQM                                 | Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge                                                  | E004      |
| Soil   | AR          | VOCs                                    | Determination of volatile organic compounds by headspace GC-MS                                                                                       | E001      |
| Soil   | AR          | VPH (C6 - C10)                          | Determination of hydrocarbons C6-C10 by headspace GC-MS                                                                                              | E001      |

**D Dried**  
**AR As Received**

**APPENDIX D**

**DISCOVERY STRATEGY  
& REMEDIATION STATEMENT**

This Appendix D to Report No 517/R03 represents the Remediation Statement for the proposed works. It aims to set out the remediation works required and to give proposals for confirming that remediation works have been carried out in a satisfactory manner. A *Completion Report* shall be required once the remediation works have been carried out. The Remediation Strategy comprises :

- D1    Discovery Strategy
- D2    Protection of Services Runs
- D3    Removal of Soil in garden areas
- D4    Installation of gases / radon membranes below buildings
- D5    Record Keeping & Reports

## **D1    Discovery Strategy**

Site workers shall be briefed as to the potential risks at the site due to former land use at the site and on neighbouring land.

If any unexpected made ground materials or other suspicious soils are observed, the works shall be halted in that area. Advice shall be taken from an appropriately experienced geotechnical or geoenvironmental engineer. The findings shall be reported to the nominated Competent Person. If further action, investigation or soil sampling is required, the Competent Person shall format an appropriate programme of further works.

Unexpected Made Ground materials or other suspicious soils shall include

- Asbestos fibres or suspected fibres of any kind
- Any metals other than very small fragments
- Discoloured gravels, clays etc
- Inclusions of putrescible materials, plastics, glass jars, plastics etc
- Any materials with a hydrocarbons type odour
- Any materials with a solvents type odour
- Any liquid other than clean groundwaters.

## **D2 Protection of services runs**

Services trenches are to be over excavated by 50mm and all arisings disposed of offsite. New imported clean granular soils shall be used as bedding below services and as backfill above. This is to protect future maintenance workers.

## **D3 Removal of Made Ground within domestic garden areas**

Low level lead contamination was noted in soils at TP's 2 and 4 at a depth of less than 0.15m.

Excavation of existing soils to 0.25m depth in all domestic garden areas has been proposed. Soil samples shall be obtained from the base of the excavation and tested to confirm that there is no residual contamination. Approximately 4 soils, samples shall be sufficient.

Excavated material shall either be placed directly onto vehicles for off site disposal or stored at a designated area on site. If to be stored on site, the storage area shall have an oils resistant liner at ground level and be bunded.

Imported soils shall be topsoil with appropriate certification to show it is suitable for use.

## **D4. Installation of gases / radon membrane**

### **D4.1 General**

A Visqueen (or similar) membrane shall be placed above the ventilated floor slabs. below ground bearing floor slabs. The appropriate grade of Visqueen shall be a minimum of a Visqueen Gas Barrier membrane if placed above a concrete floor with suitable protection. Installation shall be to manufactures' guidance.

(eg <http://www.visqueenbuilding.co.uk/default.asp>)

Works shall be witnessed by the competent person

## D5. Record Keeping & Reports

### D5.1 General

A report shall need to be prepared and issued to the local authority to show that remediation works were carried out in an appropriate manner. The report is typically referred to as the Completion Report or Verification Report. A *Competent Person* is normally nominated by the developer to witness elements of the remediation works and to prepare the Completion Report.

### D5.2 Competent Person

Any works related to remediation are typically inspected by a *Competent Person*.

It is typical that the Competent Person also be responsible for the Completion Report. The Competent Person is typically an engineer or other construction professional that has some involvement with the project but is not a direct employee of the developer or final client.

The Competent Person may in fact be a number of individuals who may be visiting the site at different stages of construction for other purposes, but who have suitable experience to witness and comment upon remediation works being carried out.

The nominated *Competent Persons* at this time are :

- **Dr David Grant** of Dig-Geotech Ltd, a geotechnical and geoenvironmental engineer with over 25 years experience.
- **Mr Jeffrey Douglas**, the scheme architect.

It is not necessary for the Competent Person to be present at site full time. However they may be required to witness key elements of works and to attend on site as required.

### **D5.3 Completion Report**

Any planning condition related to land contamination is unlikely to be mitigated until the submission and approval of a Completion Report.

It is important that accurate records be kept of all works that take place related to excavations and movement of earthworks material within, onto and off the site. Delivery tickets for both imported and exported earthworks materials should be kept. Photographs should be taken on a daily basis of key remediation processes.

Typically photographs should be taken : -

- Prior to that element of work taking place
- At key stages of that element of works
- To show completion of that element of works.

Once the remediation works are nearing completion the Competent Person shall need to prepare a report that details the remediation works carried out, presents evidence to show that the works were carried out in an appropriate manner and includes factual information such as:

- copies of any relevant materials disposal / import tickets
- certificates / technical specifications for installed membranes (if used)
- photographs of the general works and specific items related to remediation.

The report shall need to be submitted to the local authority prior to mitigation of any planning condition related to potential contamination. It may also be requested by potential house purchasers' solicitors as part of any sale.

*Dig-Geotech Limited*

South View  
Easthams Road  
Crewkerne  
Somerset TA18 7AQ

*[www.dig-geotech.com](http://www.dig-geotech.com)*

Tel : 01460 768 38