Taylor Wimpey UK Ltd

Mill Street, Eastleigh

Remediation Validation Report

June 2019

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1 Introduction

1.1 Instruction

WYG Environment Planning Transport Ltd (WYG) were commissioned by Taylor Wimpey UK Ltd to undertake validation works as per the WYG proposal dated 10th March 2015 and outlined in the Outline Remediation Strategy dated February 2015. Instructions to proceed were received in purchase order number HM-11979/00068 dated 13th March 2015. The individual remedial actions and capping validation were instructed under the following project order numbers:

- HM-11979/00104 dated 26th May 2015: Additional validation testing and asbestos quantifications;
- HM-11979/196 dated 24th November 2015: Capping validation (WYG Quote of 12th August 2015); and
- HM-11979/00196/001 dated 10th March 2016: Removal of hydrocarbons found after removal of tanalising tank.

1.2 Brief

Conditional Planning Permission for the development of the former Travis Perkins Limited site at Mill Street, Eastleigh, has been granted by Eastleigh Borough Council, reference F/11/70108, dated 13th December 2012. Conditions 30 and 31 relate to the assessment of contamination and ground conditions, including requirements for desk study, intrusive ground and ground gas investigations and provision of a scheme for remedial action. In response to Condition 31, WYG has prepared an Outline Remediation Strategy on behalf of Taylor Wimpey UK Ltd.

- WYG, Mill Street, Eastleigh, Outline Remediation Strategy, V2. February 2015 for Taylor Wimpey Plc.

The Outline Remediation Strategy specifies the requirement of a validation report for the remediation works undertaken. This report details the remedial actions undertaken during the development phase including validation of the work undertaken by WYG.

This report summarises the remedial actions undertaken and supervised by WYG and others to date. It includes the following key elements:

- Validation of the clean cap installed in areas of soft landscaping;
- The following works in the vicinity of a former tanalising tank;
    - Observation of the removal of tanalising agents within the tank;

- Observation of the removal of 28,000l tank;
- Observation of the removal of water collected in the concrete basin;
- Excavation of impacted soils in the vicinity of the former tank including excavation and removal of contaminated material and water and validation of the extent of the excavation;

- Validation testing of ground in the vicinity of former above ground fuel storage tanks;
- Excavation and removal of contaminated material in the vicinity of TP211 and validation testing of the extents of the excavation;
- Validation of cover layers constructed in garden and landscape areas; and
- Testing of stockpile materials.

1.3 Limitations

Information provided from other sources is taken in good faith and WYG cannot guarantee its accuracy.

This report has been prepared in accordance with WYG quote dated 10th March 2015 and the Outline Remediation Strategy dated February 2015. It is subject to the report conditions contained in Appendix A.

The information contained in this report is intended for the use of Taylor Wimpey UK Ltd. WYG can take no responsibility for the use of this information by any third party or for uses other than that described in this report or detailed within the terms of our engagement.

1.4 Project Team

The parties involved in the project along with their roles are listed in Table 1-1 below.

Table 1-1 Summary of Project Team and Roles

Role	Company	Key Contact
Client	Taylor Wimpey UK Ltd	Martin Stevens (previous contacts Kate Gardner & Lauren Wiltshire)
Former Site Operator (Regional Project Manager)	Travis Perkins Plc	Ben Green
Real Estate Agent	BNP Paribas Real Estate	Alastair McLeod
Fluid removal contractor (Tanalising tanks)	Prestige tank cleaning	c/o Alastair McLeod
Tank removal contractor (Tanalising tanks)	GWR	c/o Alastair McLeod
Demolition Contractor	Hughes and Salvidge	Mike Dean
Principal Contractor (Construction)	Taylor Wimpey UK Ltd	Phil Cataffo (Site Manager)
Ground works contractor	DR Groundworks	Phil Whistler

Role	Company	Key Contact
Gas membrane inspections	PAGeoContracting	Ricky Grady & Adam McDermott
Environmental consultants	WYG	Sarah Roberts Simon Johnson
Regulator (Planning Officer)	Eastleigh Borough Council	Kitty Budden
Regulator (Scientific Officer, Housing and Environmental Health)	Eastleigh Borough Council	Fiona Goode

2 Summary of Previous Reports

WYG have previously undertaken a number of phases of intrusive investigation on the site. The results of the previous investigations are presented in the following reports:

- WYG, Mill Street Eastleigh, Geoenvironmental Interpretive Report V4, May 2011, for Taylor Wimpey and Travis Perkins Plc.
- WYG, Mill Street Eastleigh, Ground Conditions Assessment, Confirmatory Testing Letter Report dated 29th August 2014 for Taylor Wimpey Plc.
- WYG, Mill Street, Eastleigh, Supplementary Geo-Environmental Interpretive Report, February 2015 for Taylor Wimpey Plc.

In light of the findings of the site investigations, an Outline Remediation Strategy has also been prepared and is presented in the following report:

- WYG, Mill Street, Eastleigh, Outline Remediation Strategy, V2. February 2015 for Taylor Wimpey Plc.

In line with the recommendations within the WYG Supplementary Site Investigation Report and Outline Remediation Strategy a Construction Phase Asbestos Management Plan has been prepared for the site and is presented in the following report.

- WYG, Former Travis Perkins, Mill Street, Eastleigh. Construction Phase Asbestos Management Plan. March 2015 for Taylor Wimpey.

Following a meeting held between Taylor Wimpey Plc, Eastleigh Borough Council and WYG on the 11th March 2015, WYG issued a letter report to provide further clarity with regard to the ground contamination issues and to provide additional information on the remediation and validation procedures that were ongoing at the time.

- WYG, Letter report – Re: Former Travis Perkins, Mill Street, Eastleigh - Regulator Queries, 31st March 2015 to Taylor Wimpey.

3 Site Information

Details of the site location; historical activity and environmental setting are included in the aforementioned WYG Geoenvironmental Interpretive Reports (2011 & 2015). A site location plan is included as Figure 1 and a site layout plan prior to commencement of redevelopment works is presented as Figure 2 including WYG investigation locations.

In summary:

- The site is a former Travis Perkins builder's merchant (site vacated on the 1st September 2014). The builder's merchant premises consisted of a number of buildings, including a retail outlet and various storage sheds and warehouses. The remainder of the site was covered by hardstanding (storage yards, car parking and access roadways). It is located at the eastern extent of Eastleigh, Hampshire and covers an area of approximately 2.14 hectares. The site is accessed off Twyford Road, within a predominantly residential area and is bounded to the south and east by railway sidings associated with Eastleigh railway station.
- The site historically accommodated a number of small gravel pits which were evident on the earliest available mapping (1860). By the late 1890s the site was developed to accommodate a saw mill. A timber yard was first recorded on the site in the 1970s.
- Based on the findings of WYG site investigation, Made Ground on the site was identified to vary in thickness between 0.2m and >3.0m. The greatest thicknesses of Made Ground was identified in the infilled gravel pits recorded on historical mapping for the site.
- The underlying geology of the site is recorded as River Terrace Deposits (gravels and clays and sands). The London Clay was encountered in one location at a depth of 9.3m.

3.1 Ground Contamination

The intrusive investigations undertaken by WYG included contamination testing. Evidence of contamination comprised:

- Elevated concentrations of a limited number of heavy metals, aromatic hydrocarbons and polycyclic aromatic hydrocarbons identified in the near surface soils on site associated with former land uses on the site.
- Minor elevated concentrations of heavy metals, metalloids and polycyclic aromatic hydrocarbons.
- Asbestos was identified in a number of samples of soil and the general distribution of the positive identifications indicates that asbestos is likely to be present within the Made Ground across the site.

Where appropriate, quantification tests were carried out on the samples and indicated concentrations of asbestos ranged from <0.001% to 0.0976%. All concentrations were below the hazardous waste threshold of 0.1%.

- One discrete area (TP211) with higher detected concentrations of hydrocarbons and BTEX was located in the vicinity of a former above ground fuel storage tank.
- Elevated levels of carbon dioxide and methane within landgas monitoring wells indicating the site is representative of Characteristic Situation 2 (with respect to the risk assessment outlined in CIRIA 665) and/ or Amber 1 as defined by the NHBC Traffic Light Classification. As such landgas protection measures were required within all new buildings on the site.

4 Outline Remediation Strategy

The outline remediation strategy identifies four key elements, each described in more detail in the following section.

- Excavation and removal of existing hardstanding and sub base where present.
- Installation of a 600mm thick cover system in areas of soft landscaping (including gardens and public open space areas) constructed from clean imported materials.
- Localised excavation of more significant contamination identified at TP211.
- A proactive active approach to previously unidentified contamination encountered during the development phase.

In addition to the remedial actions identified within the Outline Remediation Strategy, the following additional elements are also discussed within this report.

- Investigation of Made Ground in the vicinity of a number of former Above Ground Fuel Storage Tanks.
- Supervision of decommissioning of the tanalising tank and plant area followed by validation sampling of the surrounding ground.
- Preparation of an asbestos management plan for the management of crushed concrete on site.

5 Remedial actions

5.1 Asbestos management

5.1.1 Asbestos management plan

An asbestos management plan was prepared by WYG following the identification of asbestos during previous phases of investigation and in line with Outline Remediation Strategy.

- WYG, Former Travis Perkins, Mill Street, Eastleigh. Construction Phase Asbestos Management Plan. March 2015 for Taylor Wimpey.

This report recommended that the following risk management procedures be implemented:

- Communication: Discussion of presence of asbestos in on-site materials and risk management procedures;
- Boundary monitoring during the exposure of Made Ground and movement of stockpiled materials which may contain ACMs on site;
- Personal monitoring of operatives during excavations;
- Provision of Personal Protective Equipment and Respiratory Protective Equipment;
- General Site Practices: Minimise dust generation, dust suppression etc.;
- Handpicking of Visually Identifiable Asbestos Containing Materials;
- Investigation of suitability of Demolition Rubble (Crushed Materials) with regards to Asbestos; and
- Emergency procedures.

Where applicable, the individual procedures are discussed in further detail in the following sections.

5.1.2 Screening of Crushed Materials on Site (Demolition Rubble)

Concerns were raised by Eastleigh Borough Council regarding the potential presence of asbestos entrained within the crushed concrete from the demolition of the former buildings. This material was used for general fill and to form the piling mat during the construction phase of the development.

Samples of the crushed concrete were taken by WYG on the 12th March 2015 and sent for initial screening for asbestos identification and subsequent quantification where necessary. Five samples were taken from the material stockpiled on site as well as from the in-situ piling mat. A summary of the screening and

quantification tests are presented in the Table 5-1 below. The sample locations are shown in Figure 3 and laboratory test results are presented in Appendix B.

Table 5-1 Summary of results of Asbestos testing of crushed materials

Sample Reference	Location	Asbestos Screen		
		Form	Type	Quantification (%)
PM1	Piling Mat	Fibre bundles	Chrysotile	<0.001
PM2	Piling Mat	Fibre bundles	Chrysotile	Trace (<0.001)
SP1	Stockpile	Free fibres	Chrysotile	<0.001
SP2	Stockpile	Free fibres	Chrysotile	<0.001
SP3	Stockpile	Free fibres	Chrysotile	<0.001

Screening of all samples indicated that asbestos was present within this material and subsequent quantification tests show that concentrations in samples tested are below 0.001%.

The results were reported in a letter report, and it was recommended to extend the procedures outlined in the Construction Phase Asbestos Management Plan to this material as a matter of precaution.

- WYG, Letter report – Re: Former Travis Perkins, Mill Street, Eastleigh - Regulator Queries, 31st March 2015 to Taylor Wimpey.

5.2 Cover system and capping validation

A clean cap of imported topsoil and subsoil was required to be installed in all areas of soft landscaping (gardens and areas of public space). The chemical suitability of the imported material was confirmed with testing certificates from the point of origin and through samples obtained on site during the validation process. In addition, the minimum thickness of 600mm was verified on a plot by plot basis. Figure 5 shows the layout of the proposed development and locations of the plots.

The results of the validation process were presented in individual reports prepared at regular intervals during the construction phase in order to support Council of Mortgage lenders sign off as the development progressed. These reports are collated in Appendix C.

The validation process indicated that the minimum thickness of 600mm clean capping materials was met in each location and the imported capping materials were suitable for use within a residential context.

5.3 Excavation of Hydrocarbon Impacted Material (TP211)

The results of the supplementary site investigation carried out by WYG indicated elevated concentrations of aliphatic and aromatic hydrocarbons, benzene and naphthalene within the Made Ground around TP211 which could pose a theoretical risk to future site users. Due to the location of the trial pit in the vicinity of a former above ground fuel storage tank it was considered likely that the elevated concentrations of contaminants

were associated with historic fuel spills. It was therefore decided to take a pragmatic approach and to excavate the impacted material and dispose of it off site.

The excavation of material and the subsequent validation of the limits of the excavation were carried out in accordance with the recommendations presented in the Outline Remediation Strategy on 12th and 13th March 2015. The final excavation was approximately 16m by 16m and ranged in depth from 0.5m to 2.0m. In total, nine validation samples were taken from the extents of the excavation and were analysed for the presence of aliphatic and aromatic hydrocarbon and BTEX compounds. The location of the excavation and validation sampling points are presented in Figure 3 which also includes a sketch of the resulting excavation.

Given the requirement for a clean cap to be installed in areas of soft landscaping as a further barrier to contamination, the laboratory test results from the validation samples were screened against WYG Tier 1 Screening Criteria for a residential end use scenario without plant uptake. The results of the screening process are summarised in Table 5-2 below and shows the maximum residual concentration for each determinand.

Table 5-2 Summary of Testing Results TP211 Excavation

Determinand	Concentration in TP211 prior to remediation (mg/kg)	Screening Criteria (mg/kg)	Maximum Residual Concentration (mg/kg)
Aliphatic Hydrocarbon C5 – C6.	<0.1	60	<0.1
Aliphatic Hydrocarbon C6 – C8.	3.1	148	<0.1
Aliphatic Hydrocarbon C8 – C10.	155.2	35	1.2
Aliphatic Hydrocarbon C10 – C12.	**1,922.6**	**175**	**230.5**
Aliphatic Hydrocarbon C12 – C16.	1592	1270	343
Aliphatic Hydrocarbon C16 – C21.	127	173000	26
Aliphatic Hydrocarbon C21 – C35.	47	173000	67
Aromatic Hydrocarbon C5 – C7.	0.3	0.26	<0.1
Aromatic Hydrocarbon C7 – C8.	0.4	606	<0.1
Aromatic Hydrocarbon C8 – C10.	30.8	60	<0.1
Aromatic Hydrocarbon C10 – C12.	862.7	305	185.1
Aromatic Hydrocarbon C12 – C16.	579	1780	203
Aromatic Hydrocarbon C16 – C21.	88	2590	19
Aromatic Hydrocarbon C21 – C35.	191	2590	115
Benzene	0.272	0.26	$<5 \times 10^{-3}$
Toluene	0.441	606	$<5 \times 10^{-3}$
Ethylbenzene	1.46	166	7×10^{-3}
m/p-Xylene	12.09	48	0.04
o-Xylene	17.19	59	0.032

The validation results indicate that the main source of impacted material in this area has been removed such that the extents of the excavation are now shown to be at concentrations below the screening criteria for a residential end use (without plant uptake) with respect to aromatic and aliphatic hydrocarbons and BTEX

compounds. The exception to this is the identification of one sample which showed concentrations of aliphatic hydrocarbon (C10-C12) slightly above the relevant screening criteria.

The adopted screening criteria are inherently conservative and consider all exposure pathways for a residential end use including dermal contact and ingestion which are not relevant in the light of the proposed capping system. Given that the clean cap will limit direct contact with the Made Ground, the residual active pathways with respect to human health are therefore limited to the vapour phase. In this context, the results presented above are not considered to require any further risk management procedures in this area.

The excavated material was stockpiled on site in a bunded area lined with polyethylene as testing was undertaken.

5.4 Investigation of Made Ground in the Vicinity of the Former Above Ground Fuel Storage Tanks

In light of the identified area of hydrocarbon impacted soil (TP211) in the vicinity of a former above ground fuel storage tank (subsequently designated AST3) and the subsequent decision to excavate the impacted material as outlined above, the ground beneath three additional former above ground fuel storage tanks (AST1, AST2 and AST4) was also investigated to confirm ground conditions at these points and was reported in the same letter report.

- WYG, Letter report – Re: Former Travis Perkins, Mill Street, Eastleigh - Regulator Queries, 31st March 2015 to Taylor Wimpey.

Machine excavated inspection pits were excavated in the location of three former fuel tanks with samples of the underlying Made Ground analysed for aromatic and aliphatic hydrocarbon bands and BTEX compounds. The locations of these sampling points are shown on Figure 3 identified as AST1, AST2 and AST3, all of which are located in the southern portion of the site. AST3 relates to a sample taken from the location of the above ground fuel storage tank in the vicinity of TP211 which was excavated as part of the validation process (as described above) to provide additional surety that the impacted materials in this area were adequately removed.

The results did not indicate any elevated concentrations of aromatic or aliphatic hydrocarbons or BTEX compounds associated with potential fuel spills in the vicinity of AST1, AST2 and AST3. The laboratory test results are presented in Appendix B.

It was not possible to investigate the area of ground in the vicinity of AST4 (located on the eastern site boundary opposite Mill Street) due to its proximity to the boundary with land owned by Rail Track and the requirement for additional work permits in this area. It was therefore recommended that during any

excavations in this area WYG are to be alerted to any areas of impacted material as per the proactive strategy outlined in the Outline Remediation Strategy document.

5.5 Tanalising tank and plant area

The north-western corner of the site was occupied by a wood store with a tanalising plant including a 28,000 litre treatment tank situated within a concrete bund along the north-western corner of the shed. Above ground storage and plant was located in the north-eastern corner of the shed. As part of the decommissioning process the tanalising tanks associated with the treatment of timber on site were pumped dry and removed from the site between the 13th and 20th August 2014 under a watching brief from WYG. Following the removal of the underground storage tank, the integrity of the concrete bund was inspected and found to be sound. There was a quantity of rain water/ surface runoff contained within the bund further suggesting the security of the bund walls.

Photographs of the tank removal process are presented in Appendix D of this report whilst copies of waste transfer notes are presented in Appendix E.

The concrete bund and surface was broken out in the absence of WYG and the excavation backfilled. On the 29th February 2016 WYG took validation samples from the underlying soils by means of a trench dug along the length of the tanalising tank area (see Figure 4AA). Five samples were taken as shown on Figure 4A from the surrounding materials. Three of them were analysed for pH, metals, Tebuconazole and Propiconazole. The results are included in Appendix B and summarised in Table 5-3 below. All metals were found at concentrations below the relevant screening value (Residential without Plant Uptake, soil organic matter content 1%) and both Tebuconazole and Propiconazole concentrations were below the lower detection limit of 100ug/kg.

Table 5-3 Summary of Testing Results Tanalising Tank 1 excavation (29.02.2016)

Determinant	Unit	Screening Criteria	Maximum Concentration
Metals			
Arsenic	mg/kg	35	6.2
Beryllium	mg/kg	41	<0.5
Cadmium	mg/kg	84.9	<0.1
Chromium	mg/kg	627	144.7
Copper	mg/kg	6,200	10
Lead	mg/kg	225	25
Mercury	mg/kg	0.17	<0.1
Nickel	mg/kg	127	4.9
Selenium	mg/kg	595	<1
Vanadium	mg/kg	187	9
Zinc	mg/kg	40,400	10
Barium	mg/kg	NA	24

Determinant	Unit	Screening Criteria	Maximum Concentration
Fungicides			
Propiconazole	ug/kg	NA	<100
Tebuconazole	ug/kg	NA	<100

A second excavation was undertaken in the area underlying the above ground storage tanks and associated plant. According to site personnel there had been a second underground storage tank in this vicinity. The excavation revealed free phase hydrocarbons within gravelly material at approximately 1m depth. The impacted material was excavated and stockpiled in a bunded area lined with polythene for disposal off site.

Due to excessive water ingress the excavation was not completed. Additional control measures for dewatering the excavation were required to avoid cross contamination of clean material. On the 15th March 2016 the excavation was completed with a tanker present to pump out the water and using a trench box.

Figure 4B shows the layout of the excavations and sample locations. During the first excavation on 29th February 2016, it was found that contaminated water was coming in from the north-eastern corner and as such the trenches on the 15th March 2016 started in this area. Only limited further contaminated material was found and removed. Confirmatory samples were taken as outlined on Figure 4B and summarised in Table 5-4 below. All results were below the relevant screening values and the majority below the lower detection limit. The full laboratory testing certificates are included in Appendix B.

Table 5-4 Summary of Testing Results Excavation 2 (13.05.2016)

Determinant	Unit	Screening Criteria	Maximum Concentration
Total Petroleum Hydrocarbons (TPH)			
Aliphatics			
>C5-C6	mg/kg	60	<0.1
>C6-C8	mg/kg	148	<0.1
>C8-C10	mg/kg	35	<0.1
>C10-C12	mg/kg	175	<0.2
>C12-C16	mg/kg	1270	<4
>C16-C21	mg/kg	173,000	<7
>C21-35	mg/kg	173,000	16
Total aliphatics C5-C35	mg/kg	NA	<19
Aromatics			
>C5-EC7	mg/kg	0.26	<0.1
>EC7-EC8	mg/kg	606	<0.1
>EC8-EC10	mg/kg	60	<0.1
>EC10-EC12	mg/kg	305	<0.2
>EC12-EC16	mg/kg	1,780	53
>EC16-EC21	mg/kg	2,590	74
>EC21-EC35	mg/kg	2,590	179
Total aromatics	mg/kg	NA	192
BTEX			

Determinant	Unit	Screening Criteria	Maximum Concentration
MTBE	mg/kg	NA	<5
Benzene	mg/kg	260	<5
Toluene	mg/kg	606,000	<5
Ethylbenzene	mg/kg	166,000	<5
m/p-Xylene	mg/kg	53,000	<5
o-Xylene	mg/kg	59,000	<5

5.6 Gas Protection Measures

Gas protection measures, comprising a gas resistant membrane and passively vented sub-floor void, were incorporated into the construction works. These features have been independently inspected and verified by PAGeoContracting and copies of their inspection records are presented in Appendix F.

5.7 Pro-active Approach

As part of the Remediation Strategy document, the requirement for a proactive approach was outlined in the event that any previously unidentified contamination was encountered during the development phase. It was outlined that WYG should be contacted at the earliest opportunity to ensure the associated risks were fully assessed and appropriate risk management procedures were put in place.

WYG were not contacted during the development process and understand that no contamination was encountered during the ground works, other than those outlined above.

5.8 Summary

The following table summarises the actions undertaken on site to break the exposure pathway between the identified contamination and key receptors (future site users, construction workers and wider environment) and how these actions have been validated.

Table 5-5 Overview of Environmental Concerns

Environmental Concern	Remedial/ Protection measures	Validation	Future Risks/ management requirements
Asbestos identified within Made Ground across the site	Installation of a clean cap of a combination of clean imported topsoil and subsoil making up a minimal thickness of 600m in soft landscaping areas	Plots were validated on a plot by plot basis by WYG and individual validation reports were issued.	Preservation of the capping layer and underlying geotextile: • Landscaping workers to be made aware of the capping system, nature of underlying Made Ground and associated risks to human health. • Site to be monitored for animal activity with regards to burrowing within the capping system • Any damage to be repaired at the earliest opportunity Future site owners should be made aware of the contamination and the capping system.
	Personal protection equipment to be worn by site construction workers	Site Induction / Toolbox Talks completed by Principal Contractor	Not Applicable
Elevated concentrations of heavy metals, aromatic hydrocarbons and PAHs in near surface soils.	Installation of a clean cap of a combination of clean imported topsoil and subsoil making up a minimal thickness of 600m in soft landscaping areas.	Plots were validated on a plot by plot basis by WYG and individual validation reports issued.	Preservation of the capping layer and underlying geotextile: • Landscaping workers to be made aware of the capping system, nature of underlying Made Ground and associated risks to human health. • Site to be monitored for animal activity with regards to burrowing within the capping system • Any damage to be repaired at the earliest opportunity Future site owners should be made aware of the contamination and the capping system.

Environmental Concern	Remedial/ Protection measures	Validation	Future Risks/ management requirements
Elevated concentrations of carbon dioxide and methane	Installation of landgas protection measures	Hand over/ Sign off forms and CIRIA visual inspection forms have been issued by PAGeoContracting (see Appendix)	Any maintenance to the landgas protection measures should be communicated to the future site owners.
Discrete area of hydrocarbon and BTEX contamination in vicinity of former above ground fuel storage tank (TP211)	Excavation of impacted material and offsite disposal	Validation samples taken at the boundaries of excavation showed that the concentrations of hydrocarbons and BTEX were significantly reduced and, with the exception of aliphatic C10-C12, below the relevant screening criteria. Given the installation of a clean cover no further risk management measures are considered necessary.	Preservation of the capping layer and underlying geotextile: • Landscaping workers to be made aware of the capping system, nature of underlying Made Ground and associated risks to human health. • Site to be monitored for animal activity with regards to burrowing within the capping system • Any damage to be repaired at the earliest opportunity Future site owners should be made aware of the potential residual contamination and the capping system.
Above Ground Storage Tanks	Investigation of above ground storage tank locations (AST1 and AST2)	Validation samples taken from the underlying soils showed no elevated concentrations of aromatic or aliphatic hydrocarbons or BTEX compounds.	None
Tanalising tank and plant area	WYG attended the pumping out of the residual tanalising agents in the various tanks and the removal of the 28,000l storage tank. The water collected in the concrete basin was removed. Following the breaking out of the concrete surface, a trial trench was dug along the concrete bund location.	Validation samples taken from the underlying soils showed no elevated concentrations of metals or fungicides.	None

Environmental Concern	Remedial/ Protection measures	Validation	Future Risks/ management requirements
Localised hydrocarbon contamination in tanalising tank area	Anecdotal evidence suggested that there was a second underground storage tank present in the area of the tanalising plant and WYG dug a trial pit in this area. Hydrocarbon contamination was encountered and the impacted material was excavated and disposed offsite. The excavation required dewatering and disposal of the contaminated water.	Validation samples taken at the boundaries of excavation showed that the concentrations of hydrocarbons and BTEX were significantly reduced and below the relevant screening criteria.	Preservation of the capping layer and underlying geotextile: • Landscaping workers to be made aware of the capping system, nature of underlying Made Ground and associated risks to human health. • Site to be monitored for animal activity with regards to burrowing within the capping system • Any damage to be repaired at the earliest opportunity Future site owners should be made aware of the potential residual contamination and the capping system.

6 Completion statement

Based on the observations made on site and the information provided to us, and accepted in good faith, WYG consider the remedial works have been carried out in accordance with the WYG Remediation Strategy Document dated February 2015.

- WYG, Mill Street, Eastleigh, Outline Remediation Strategy, V2. February 2015 for Taylor Wimpey Plc.

The exposure pathway between the contamination identified within the Made Ground and the future site users has been effectively removed by the placement of a minimum 600m thick cap of clean imported topsoil underlain by a geotextile membrane.

The risk from landgas has been addressed by the installation of landgas protection measures (the placement of such landgas protection measures are not covered by the WYG remediation strategy)

One distinct area of hydrocarbon impacted soil encountered in a supplementary investigation in 2015 (TP211) has been remediated and validated. The contaminated soil was excavated and disposed of off-site. The validation samples taken from the boundaries of the excavation showed that the concentrations of hydrocarbons and BTEX were significantly reduced and on all but one occasion (Aliphatics C10-12) below the relevant screening criteria. Considering the installation of a cap the residual risk is considered negligible.

Ground conditions in areas of higher risk of contamination due to land use such as the tanalising tank and plant area and above ground storage tank locations have been investigated. With the exception of an area around an underground storage tank near the tanalising tank, no contamination was encountered, and the validation samples showed no exceeding concentrations of the relevant chemicals.

Free phase product in soil was found near a previously unidentified underground storage tank. WYG were informed by site personnel that during the breaking out of the concrete bund of the tanalising tank and the surrounding concrete surface, a second underground storage tank was present. A validation pit was dug in this area and encountered free phase product within the underlying soils. The impacted material was excavated and stockpiled in a bunded area lined with polythene. Due to excessive water ingress, the excavation could not be completed without cross contaminating clean material. The excavation was completed with a tanker present to dewater the excavation. All impacted materials were disposed of off-site. The validation samples from the boundaries of the excavation showed no exceeding concentrations of hydrocarbons or BTEX compound and as such the area is considered to be remediated.

WYG understand that no other areas of previously unidentified contamination were encountered during the groundworks.

The following key points are highlighted:

- Capping layer thickness (minimum 600 mm) should be preserved and changes in site levels or soft landscaping areas should be undertaken with in consideration of maintaining the 600mm depth of cap.
- The integrity of the underlying geotextile should be preserved with all workers undertaking landscaping works made aware of the presence of the capping system and the nature of the underlying Made Ground deposits and the associated risks to human health.
- The site should be monitored for animal activity with regards to burrowing within the capping system. Any damage to the capping system, including the integrity of the geotextile should be repaired at the earliest opportunity.
- All future site owners should be informed of:
    - The nature of the contamination associated with the Made Ground on site and the form of the capping system in place to make sure that levels of protection are maintained throughout the future of the site.
    - The landgas protection measures and any maintenance associated to it.

Abbreviations

AOD	above Ordnance Datum
bgl	below ground level
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
DRO	Diesel Range Organics
EPH	Extractable Petroleum Hydrocarbons
EQS	Environmental Quality Standards
FOC	Fraction Organic Carbon
LOD	Limit of detection
OS	Ordnance Survey
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PPE	Personal Protection Equipment
ppm	parts per million
PRO	Petroleum Range Organics
SGV	Soil Guideline Values
SOM	Soil Organic Matter
SVOC	Semi-volatile organic compounds
TPH	Total Petroleum Hydrocarbon
VOC	Volatile Organic Carbon
VPH	Volatile Petroleum Hydrocarbons

Figures

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N

SITE

EASTLEIGH

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REV	DESCRIPTION	BY	CHK	APP	DATE

5th FLOOR, LONGCROSS COURT
47 NEWPORT ROAD
CARDIFF
CF24 0AD

TEL: +44 (0)29 2032 8789
FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY UK LTD

Project: MILL STREET, EASTLEIGH
PHASE 2 SITE INVESTIGATION

Drawing Title: SITE LOCATION PLAN

Scale @ A1	Drawn	Date	Checked	Date	Approved	Date
NTS	PF	20.07.16	LR	20.07.16	CDF	20.07.16

Project No.	Office	Type	Drawing No.	Revision
A069641-5	CDF	GEO	1	00

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LEGEND:

PHASE 1 SITE INVESTIGATION WYG 2011:

APPROXIMATE LOCATION OF BOREHOLES - WYG 2011

APPROXIMATE LOCATION OF HAND DUG PITS - WYG 2011

APPROXIMATE LOCATION OF WINDOWLESS SAMPLES - WYG 2011

PHASE 2 SITE INVESTIGATION WYG FEB 2015:

TP APPROXIMATE LOCATION OF TRIAL PITS

WS APPROXIMATE LOCATION OF WINDOW SAMPLES WITH INSTALLATIONS



REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

TAYLOR WIMPEY UK LTD

5th FLOOR, LONGCROSS COURT
47 NEWPORT ROAD
CARDIFF
CF24 0AD

TEL: +44 (0)29 2082 9200
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e-mail: cardiff@wyg.com

Project:

MILL STREET, EASTLEIGH
PHASE 2 SITE INVESTIGATION

Drawing Title:

SITE LAYOUT PLAN

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
1:1000	PP	20.07.16	LK	20.07.16	CBP	20.07.16

Project No.	Office	Type	Drawing No.	Revision
A069641-5	CDF	GEO	2	00

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Validation Sample Point Locations

① Side North 0.1m - 0.5m

② Base North 0.5m

③ Base South East 1m

④ Base South 1.3m

⑤ Base South 2m

⑥ Side East 0.5m - 1m

⑦ Side East 0.5m

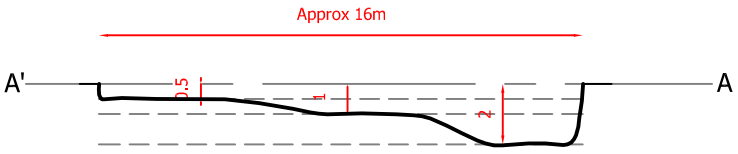
⑧ Base South West 1m

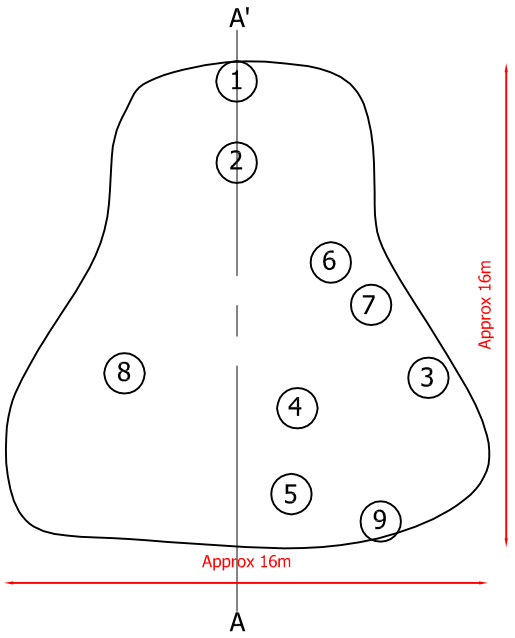
⑨ Side South 0.7m

0 25 50 75 100 125 m

SCALE 1:2500

Cross Section of Excavation of Hydrocarbon Impacted Material





LEGEND:

PHASE 1 SITE INVESTIGATION WYG 2011:

APPROXIMATE LOCATION OF BOREHOLES - WYG 2011

APPROXIMATE LOCATION OF HAND DUG PITS - WYG 2011

APPROXIMATE LOCATION OF WINDOWLESS SAMPLES - WYG 2011

PHASE 2 SITE INVESTIGATION WYG FEB 2015:

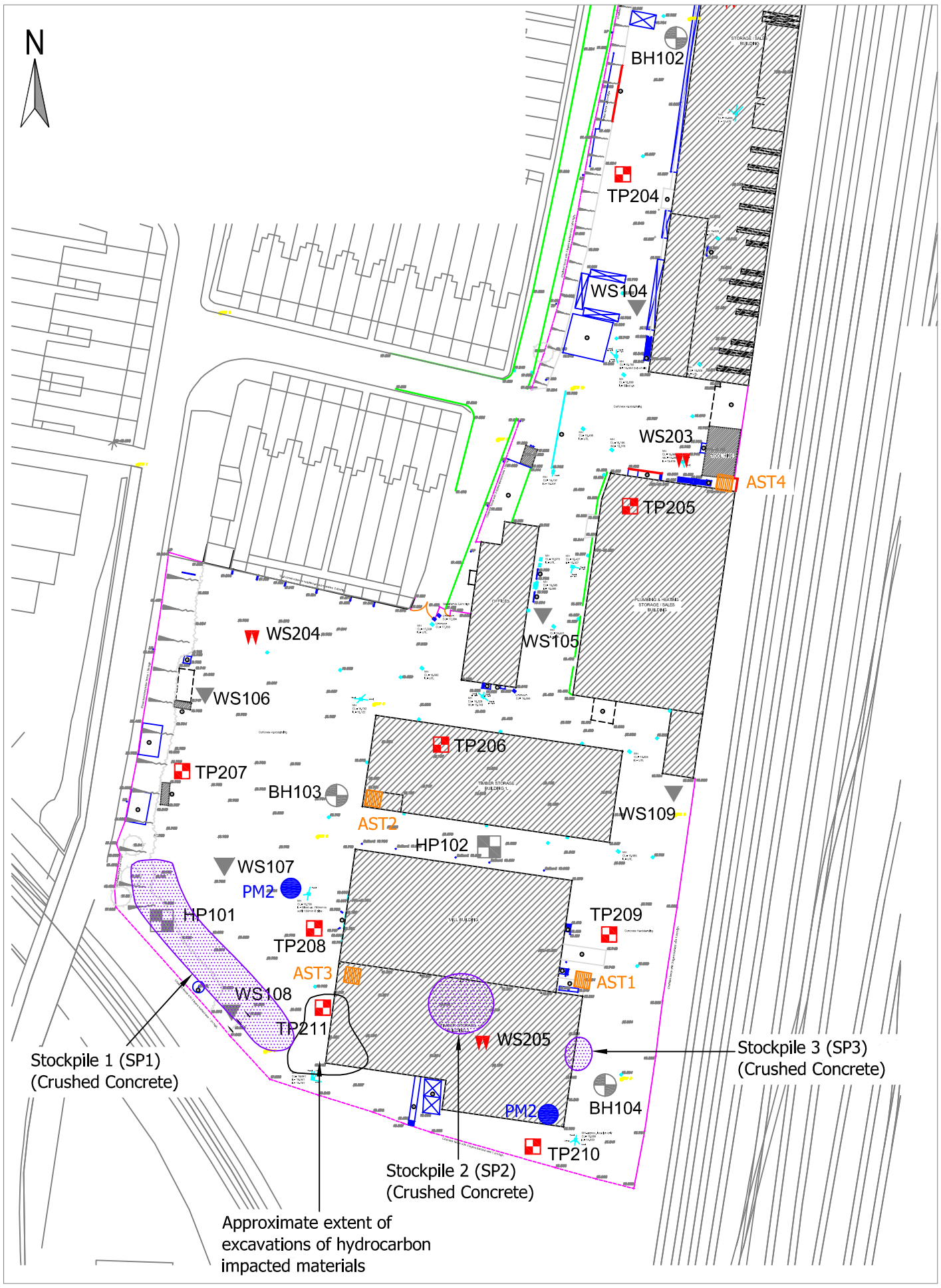
TP APPROXIMATE LOCATION OF TRIAL PITS

WS APPROXIMATE LOCATION OF WINDOW SAMPLES WITH INSTALLATIONS

APPROXIMATE LOCATION OF TIMBER TANNALISING TANK

APPROXIMATE LOCATION OF ABOVE GROUND FUEL TANKS

PILING MAT SAMPLING LOCATIONS



0 10 20 30 40 50 m

SCALE 1:1000

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

TAYLOR WIMPEY UK LTD

5th FLOOR, LONGCROSS COURT
47 NEWPORT ROAD
CARDIFF
CF24 0AD

TEL: +44 (0)29 2082 9200
FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Project:

MILL STREET, EASTLEIGH
VALIDATION LETTER REPORT

Drawing Title:

VALIDATION LOCATIONS FROM REMOVAL OF HYDROCARBON IMPACTED MATERIAL

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
AS SHOWN	PP	20.07.16	LK	20.07.16	CBP	20.07.16

Project No.	Office	Type	Drawing No.	Revision
A069641-5	CDF	GEO	3	00

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DETAIL 1

Sample Locations:

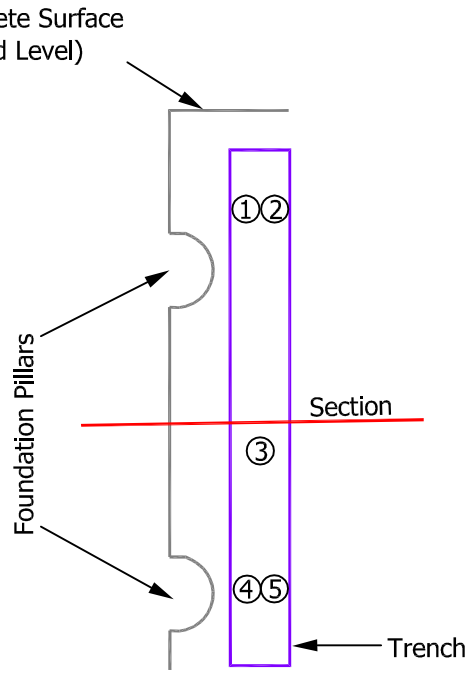
① T1 ESI @ 2.5mbgl (Base, Sand)

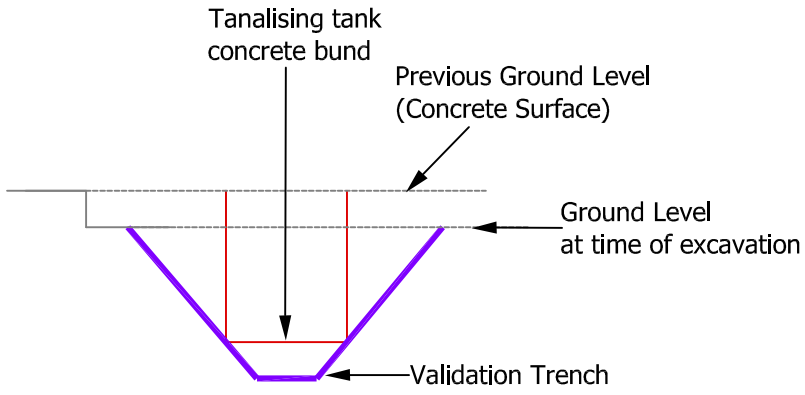
② T1 ES2 @ 2.1m bgl (Base, Gravel)

③ T1 ES3 @ 2.3mbgl (Base, Sand)

④ T1 ES4 @ 2.3m bgl (Base, Sand)

⑤ T1 ES5 @ 1.3mbgl (Side, Gravel)







Concrete surface and bund after removal of tank - looking North (20.08.2014)



Tanalising Tank area after breaking out of concrete surface and bund - looking North (29.02.2016)



Validation Trench along Tanalising Tank Area - looking South (29.02.2016)



Validation Trench along Tanalising Tank Area - looking North (29.02.2016)



Validation Trench along Tanalising Tank Area - looking South (29.02.2016)

PHASE 1 SITE INVESTIGATION WYG 2011:

APPROXIMATE LOCATION OF BOREHOLES - WYG 2011

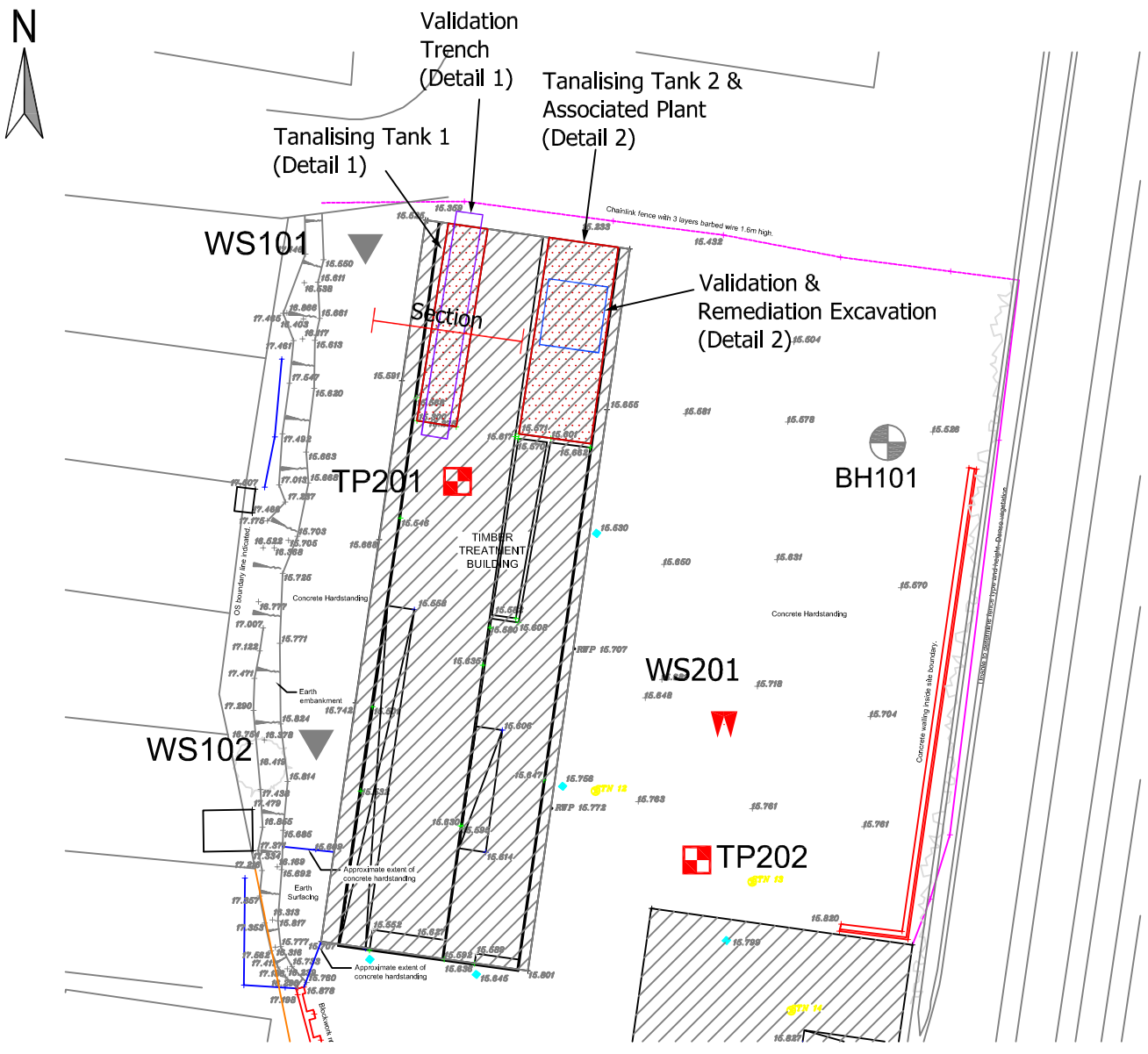
APPROXIMATE LOCATION OF HAND DUG PITS - WYG 2011

APPROXIMATE LOCATION OF WINDOWLESS SAMPLES - WYG 2011

PHASE 2 SITE INVESTIGATION WYG FEB 2015:

APPROXIMATE LOCATION OF TRIAL PITS

APPROXIMATE LOCATION OF WINDOW SAMPLES WITH INSTALLATIONS



REV	DESCRIPTION	BY	CHK	APP	DATE

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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY UK LTD

Project: MILL STREET, EASTLEIGH

Drawing Title: VALIDATION LOCATIONS FROM TANALISING TANK & PLANT AREA

Scale @	Drawn	Date	Checked	Date	Approved	Date
A3	PP	18.07.16	LK	18.07.16	CBP	19.07.16

Project No.	Office	Type	Drawing No.	Revision
A069641-5	CDF	N	4A	00

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Sample Locations:

① Side North

② Side East

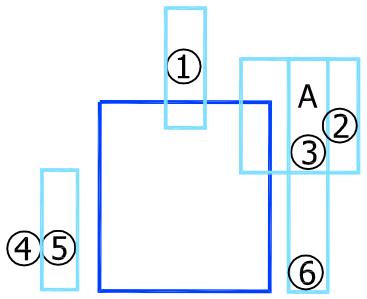
③ Base East

④ Side West

⑤ Base West

⑥ Side South East

DETAIL 2





Trench A Set up with trench box and hose to pump groundwater - View looking West



Trench A Set up with trench box and hose to pump groundwater - View looking down trench

LEGEND:

VALIDATION EXCAVATION 29.02.16

REMEDIATION VALIDATION EXCAVATION 13.05.16

PHASE 1 SITE INVESTIGATION WYG 2011:

APPROXIMATE LOCATION OF BOREHOLES - WYG 2011

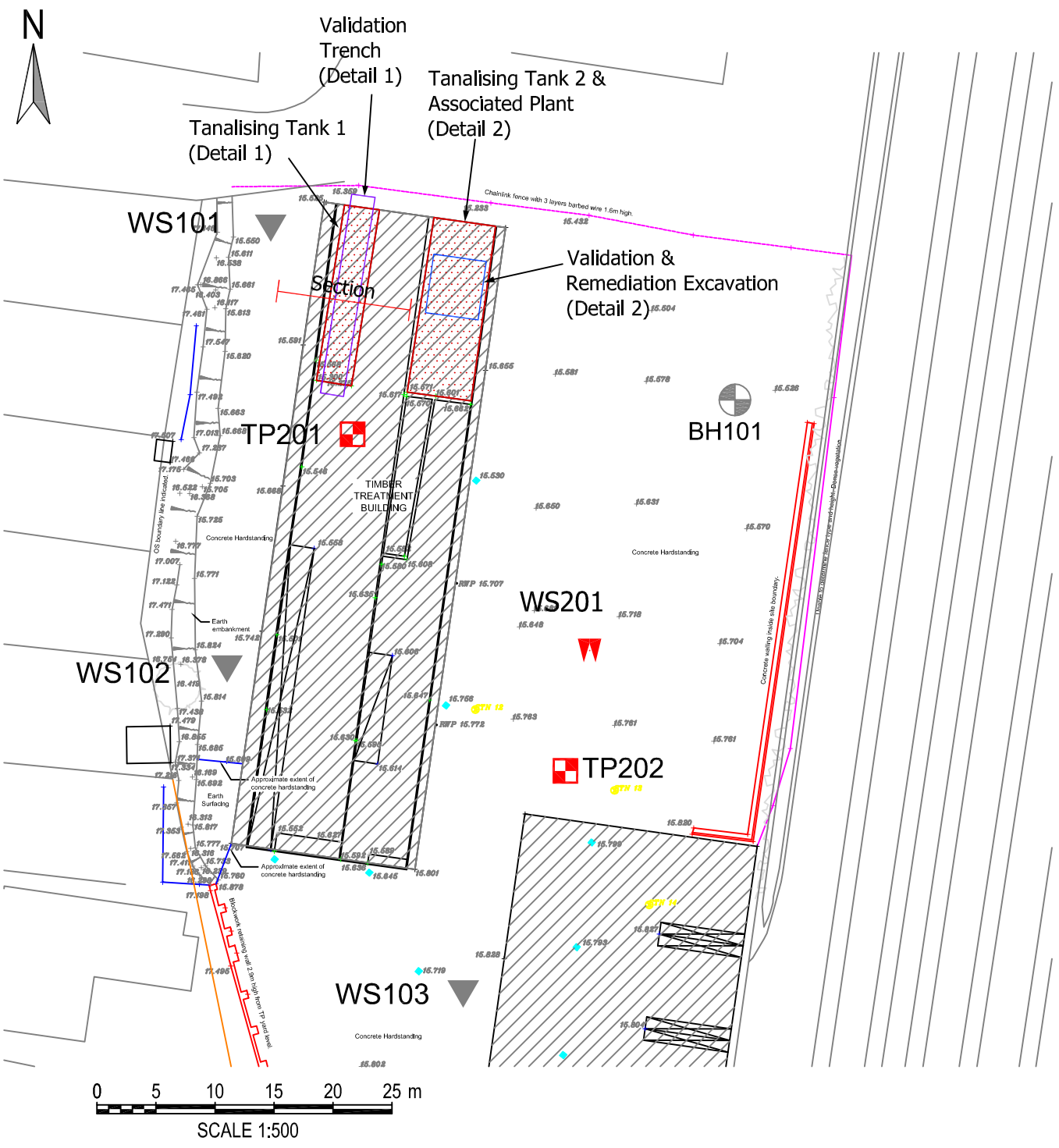
APPROXIMATE LOCATION OF HAND DUG PITS - WYG 2011

APPROXIMATE LOCATION OF WINDOWLESS SAMPLES - WYG 2011

PHASE 2 SITE INVESTIGATION WYG FEB 2015:

APPROXIMATE LOCATION OF TRIAL PITS

APPROXIMATE LOCATION OF WINDOW SAMPLES WITH INSTALLATIONS



REV	DESCRIPTION	BY	CHK	APP	DATE

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FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY UK LTD

Project: MILL STREET, EASTLEIGH

Drawing Title: VALIDATION LOCATIONS FROM TANALISING TANK & PLANT AREA

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
	PP	18.07.16	LK	18.07.16	CBP	19.07.16

Project No.	Office	Type	Drawing No.	Revision
A069641-5	CDF	N	4B	00

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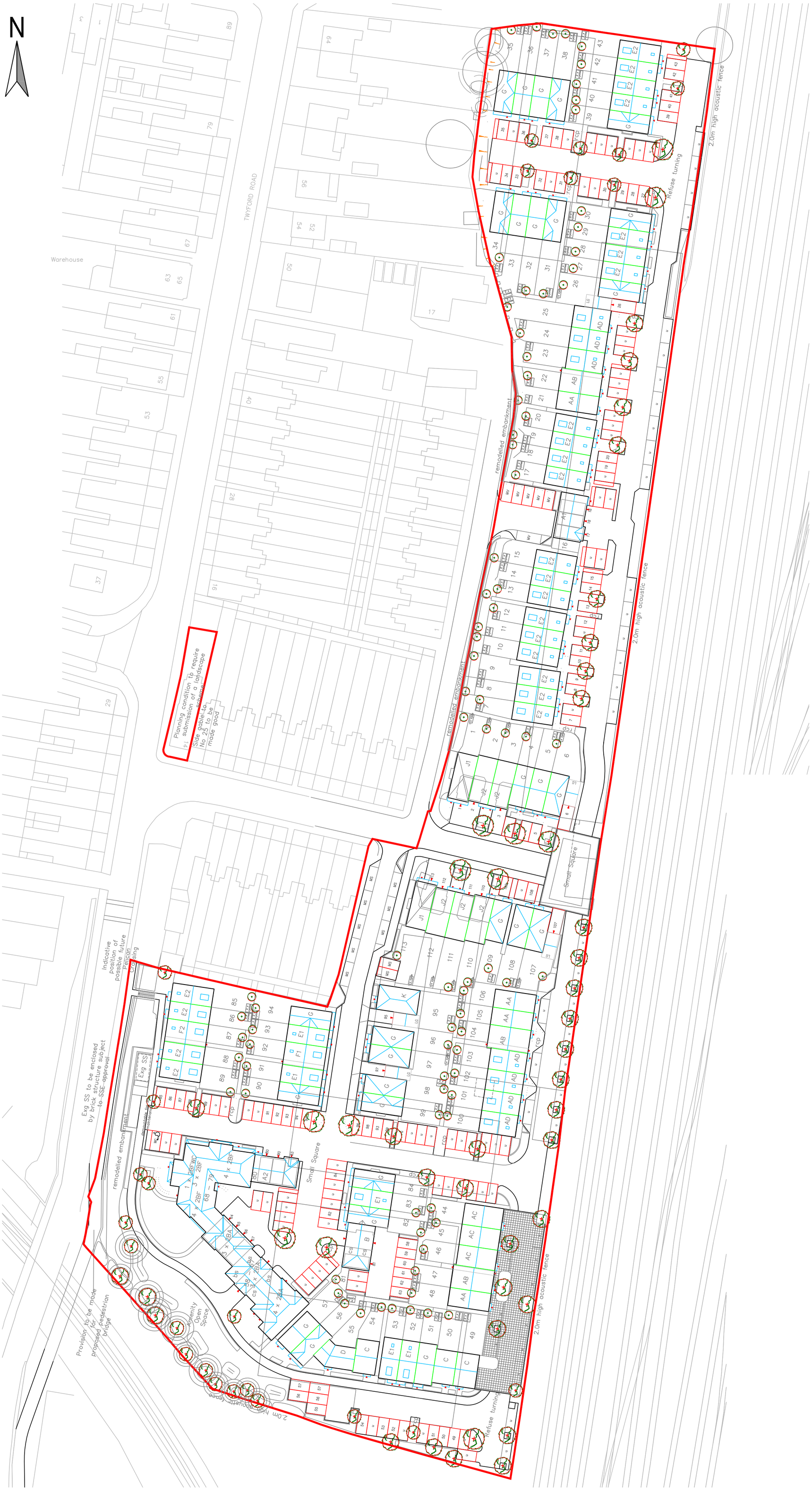
LEGEND:

SITE BOUNDARY



REV	DESCRIPTION	BY	CHK	APP	DATE

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Client: TAYLOR WIMPEY UK LTD

Project: MILL STREET, EASTLEIGH

Drawing Title: PROPOSED DEVELOPMENT PLAN

Scale @ A1	Drawn	Date	Checked	Date	Approved	Date
1:500	PJ	20.07.16	LK	20.07.16	CBP	20.07.16

Project No.	Office	Type	Drawing No.	Revision
A069641-5	CDF	N	5	00

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Appendices

Appendix A – Report Conditions

APPENDIX A - REPORT CONDITIONS
GROUND INVESTIGATION

This report is produced solely for the benefit of Taylor Wimpey UK Ltd and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site.

This report is based on a visual site inspection, reference to accessible referenced historical records, information supplied by those parties referenced in the text and preliminary discussions with local and Statutory Authorities. Some of the opinions are based on unconfirmed data and information and are presented as the best that can be obtained without further extensive research. Where ground contamination is suspected but no physical site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to activities related to the site. Where test results undertaken by others have been made available these can only be regarded as a limited sample. The possibility of the presence of contaminants, perhaps in higher concentrations, elsewhere on the site cannot be discounted.

Whilst confident in the findings detailed within this report because there are no exact UK definitions of these matters, being subject to risk analysis, we are unable to give categoric assurances that they will be accepted by Authorities or Funds etc. without question as such bodies often have unpublished, more stringent objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYG. In time improved practices or amended legislation may necessitate a re-assessment.

The assessment of ground conditions within this report is based upon the findings of the study undertaken. We have interpreted the ground conditions in between locations on the assumption that conditions do not vary significantly. However, no investigation can inspect each and every part of the site and therefore changes or variances in the physical and chemical site conditions as described in this report cannot be discounted.

The report is limited to those aspects of land contamination specifically reported on and is necessarily restricted and no liability is accepted for any other aspect especially concerning gradual or sudden pollution incidents. The opinions expressed cannot be absolute due to the limitations of time and resources imposed by the agreed brief and the possibility of unrecorded previous use and abuse of the site and adjacent sites. The report concentrates on the site as defined in the report and provides an opinion on surrounding sites. If migrating pollution or contamination (past or present) exists further extensive research will be required before the effects can be better determined.

Appendix B – Laboratory Testing Results

Appendix B.1 – Laboratory testing results March 2015 (Asbestos testing, AST validation testing, validation testing excavation near TP211)

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
5th Floor
Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Attention :	Sarah Roberts
Date :	25th March, 2015
Your reference :	A069641-5
Our reference :	Test Report 15/4863 Batch 1
Location :	Mill St. Eastleigh
Date samples received :	14th March, 2015
Status :	Final report
Issue :	1

Nineteen samples were received for analysis on 14th March, 2015 of which seventeen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Bob Millward BSc FRSC
Principal Chemist

Client Name: WYG
Reference: A069641-5
Location: Mill St. Eastleigh
Contact: Sarah Roberts
JE Job No.: 15/4863

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	LOD/LOR	Units	Method No.
Sample ID	AST3	SP3	SP2	PM1	SP1	AST2	AST1	PM2	BASE SOUTH EAST	SIDE NORTH			
Depth	0.50-1.00								1.00	0.10-0.50			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	12/03/2015	12/03/2015	12/03/2015	12/03/2015	12/03/2015	12/03/2015	12/03/2015	12/03/2015	13/03/2015	13/03/2015			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015			
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	-	-	-	-	<1.0 A	<0.1	-	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	-	-	-	-	<1.0 A	<0.1	-	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	-	-	-	-	<1.0 A	<0.1	-	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	-	-	-	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	-	-	-	-	<4	<4	-	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	-	-	-	-	<7	13	-	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	-	-	-	-	163	74	-	<7	67	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	-	-	-	-	163	87	-	<19	67	<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	-	-	-	-	<1.0 A	<0.1	-	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	-	-	-	-	<1.0 A	<0.1	-	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	-	-	-	-	<1.0 A	<0.1	-	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	-	-	-	-	<0.2	<0.2	-	<0.2	8.8	<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	-	-	-	-	<4	<4	-	<4	19	<4	mg/kg	TM5/PM16
>EC16-EC21	<7	-	-	-	-	40	<7	-	<7	19	<7	mg/kg	TM5/PM16
>EC21-EC35	<7	-	-	-	-	265	63	-	<7	103	<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	-	-	-	-	305	63	-	<19	150	<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	-	-	-	-	468	150	-	<38	217	<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	-	-	-	-	<50 A	<5	-	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	-	-	-	-	<50 A	<5	-	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	-	-	-	-	<50 A	<5	-	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	-	-	-	-	<50 A	<5	-	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	-	-	-	-	<50 A	<5	-	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5	-	-	-	-	<50 A	<5	-	<5	<5	<5	ug/kg	TM31/PM12
Natural Moisture Content	13.0	-	-	-	-	41.8	9.4	-	13.0	42.6	<0.1	%	PM4/PM0
Natural Moisture Content	-	13.4	10.9	9.0	7.1	-	-	7.6	-	-	<0.1	%	PM4/PM0
Mass of Dry Sample	-	48.8	48.6	53.3	51.1	-	-	51.9	-	-	<0.1	g	PM4/PM0
Asbestos PCOM Quantification (Fibres)	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	mass %	TM65/PM42
Asbestos Gravimetric & PCOM Total	-	<0.001	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	mass %	TM65/PM42

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A069641-5
Location: Mill St. Eastleigh
Contact: Sarah Roberts
JE Job No.: 15/4863

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	21-22	23-24	25-26	27-28	29-30	31-32	33-34				LOD/LOR	Units	Method No.
Sample ID	SIDE SOUTH	BASE SOUTH	SIDE EAST	BASE NORTH	BASE SOUTH WEST	SIDE EAST	BASE SOUTH						
Depth	0.70	2.00	0.50-1.00	0.50	1.00	0.50	1.30						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J						
Sample Date	13/03/2015	13/03/2015	13/03/2015	13/03/2015	13/03/2015	13/03/2015	13/03/2015						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015	14/03/2015						
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<1.0 A	<0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<1.0 A	<0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>C8-C10	1.2	<0.1	<1.0 A	<0.1	<0.1	0.6	0.5				<0.1	mg/kg	TM36/PM12
>C10-C12 #M	20.6	<0.2	7.6	<0.2	<0.2	230.5	11.9				<0.2	mg/kg	TM5/PM16
>C12-C16 #M	16	<4	<4	<4	<4	343	43				<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7	<7	26	20				<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	11	<7	<7	<7	<7				<7	mg/kg	TM5/PM16
Total aliphatics C5-35	38	<19	<19	<19	<19	600	75				<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<1.0 A	<0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<1.0 A	<0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<1.0 A	<0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>EC10-EC12	12.0	<0.2	5.0	<0.2	<0.2	185.1	2.3				<0.2	mg/kg	TM5/PM16
>EC12-EC16	16	<4	<4	<4	<4	203	7				<4	mg/kg	TM5/PM16
>EC16-EC21	9	<7	<7	<7	<7	18	16				<7	mg/kg	TM5/PM16
>EC21-EC35	32	42	50	<7	<7	35	115				<7	mg/kg	TM5/PM16
Total aromatics C5-35	69	42	55	<19	<19	441	140				<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	107	42	55	<38	<38	1041	215				<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<50 A	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<50 A	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<50 A	<5	<5	<5	<5				<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<50 A	<5	<5	7	<5				<5	ug/kg	TM31/PM12
m/p-Xylene #	36	<5	<50 A	<5	<5	40	16				<5	ug/kg	TM31/PM12
o-Xylene #	32	<5	<50 A	<5	<5	28	31				<5	ug/kg	TM31/PM12
Natural Moisture Content	15.5	16.0	24.6	17.2	10.3	16.7	13.4				<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-	-	-				<0.1	%	PM4/PM0
Mass of Dry Sample	-	-	-	-	-	-	-				<0.1	g	PM4/PM0
Asbestos PCOM Quantification (Fibres)	-	-	-	-	-	-	-				<0.001	mass %	TM65/PM42
Asbestos Gravimetric & PCOM Total	-	-	-	-	-	-	-				<0.001	mass %	TM65/PM42

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A069641-5
Location: Mill St. Eastleigh
Contact: Sarah Roberts

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

If asbestos fibres are reported at trace levels there will not be enough fibres to quantify and will be less than 0.001%.

Signed on behalf of Jones Environmental Laboratory:



Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Description	Asbestos Containing Material	Asbestos Results	Asbestos Level	Comments
15/4863	1	SP3		4	18/03/15	soil/stones	Free Fibres	Chrysotile	Quantifiable	
15/4863	1	SP2		6	18/03/15	soil/stones	Free Fibres	Chrysotile	Quantifiable	
15/4863	1	PM1		8	18/03/15	soil/stones	Fibre Bundles	Chrysotile	Quantifiable	
15/4863	1	SP1		10	18/03/15	soil/stones	Free Fibres	Chrysotile	Quantifiable	
15/4863	1	PM2		16	18/03/15	soil/stones	Fibre Bundles	Chrysotile	Quantifiable	

Client Name: WYG
Reference: A069641-5
Location: Mill St. Eastleigh
Contact: Sarah Roberts

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 15/4863						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/4863

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory . It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
OC	Outside Calibration Range
A	x10 Dilution

JE Job No: 15/4863

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM12/PM16	CWG GC-FID			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes

JE Job No: 15/4863

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	

Appendix B.2 – Laboratory testing results February 2016 (Validation testing tanalising tank)

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
5th Floor
Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Attention :	Sarah Roberts
Date :	8th March, 2016
Your reference :	A069641-5
Our reference :	Test Report 16/5608 Batch 1
Location :	Mill St. Eastleigh
Date samples received :	1st March, 2016
Status :	Final report
Issue :	1

Fourteen samples were received for analysis on 1st March, 2016 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A069641-5
Location: Mill St. Eastleigh
Contact: Sarah Roberts
JE Job No.: 16/5608

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	7-8	9-10									
Sample ID	T1	T1	T1									
Depth	2.50	2.30	2.30									
COC No / misc												
Containers	V J T	V J	V J									
Sample Date	29/02/2016	29/02/2016	29/02/2016									
Sample Type	Soil	Soil	Soil									
Batch Number	1	1	1									
Date of Receipt	01/03/2016	01/03/2016	01/03/2016									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Arsenic #M	6.2	2.7	<0.5								<0.5	mg/kg	TM30/PM15
Barium #M	19	24	2								<1	mg/kg	TM30/PM15
Beryllium	<0.5	<0.5	<0.5								<0.5	mg/kg	TM30/PM15
Cadmium #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM30/PM15
Chromium #M	144.7	144.3	3.1								<0.5	mg/kg	TM30/PM15
Copper #M	10	5	<1								<1	mg/kg	TM30/PM15
Lead #M	<5	25	<5								<5	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM30/PM15
Nickel #M	4.4	4.9	1.0								<0.7	mg/kg	TM30/PM15
Selenium #M	<1	<1	<1								<1	mg/kg	TM30/PM15
Vanadium	7	9	3								<1	mg/kg	TM30/PM15
Zinc #M	5	10	<5								<5	mg/kg	TM30/PM15
Propiconazole	<100	<100	<100								<100	ug/kg	TM16/PM8
Tebuconazole	<100	<100	<100								<100	ug/kg	TM16/PM8
Natural Moisture Content	23.4	23.1	24.8								<0.1	%	PM4/PM0
pH #M	9.07	9.21	8.71								<0.01	pH units	TM73/PM11

Client Name: WYG
Reference: A069641-5
Location: Mill St. Eastleigh
Contact: Sarah Roberts

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 16/5608						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 16/5608

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 16/5608

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No

Appendix B.3 – Laboratory testing results May 2016 (Validation testing excavation near tanalising tank)

Jones Environmental Laboratory

Registered Address : Unit 3 Deeside Point, Zone 3, Deeside Industrial Park, Deeside, CH5 2UA. UK

Unit 3 Deeside Point
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Tel: +44 (0) 1244 833780
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WYG
5th Floor
Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Attention :	Sarah Roberts
Date :	24th May, 2016
Your reference :	A069641-5
Our reference :	Test Report 16/8908 Batch 1
Location :	Mill St Eastleigh
Date samples received :	14th May, 2016
Status :	Final report
Issue :	1

Eight samples were received for analysis on 14th May, 2016 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: WYG
Reference: A069641-5
Location: Mill St Eastleigh
Contact: Sarah Roberts
JE Job No.: 16/8908

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24			LOD/LOR	Units	Method No.
Sample ID	SIDE EAST	SIDE SOUTH EAST	SIDE WEST	SIDE NORTH	BASE EAST	BASE WEST	STOCKPILE 1	STOCKPILE 2					
Depth	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	1.6	2.0							
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T					
Sample Date	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016					
Arsenic #M	-	-	-	-	-	-	5.1	4.3			<0.5	mg/kg	TM30/PM15
Beryllium	-	-	-	-	-	-	<0.5	0.8			<0.5	mg/kg	TM30/PM15
Cadmium #M	-	-	-	-	-	-	0.2	0.3			<0.1	mg/kg	TM30/PM15
Chromium #M	-	-	-	-	-	-	61.6	63.3			<0.5	mg/kg	TM30/PM15
Copper #M	-	-	-	-	-	-	34	12			<1	mg/kg	TM30/PM15
Lead #M	-	-	-	-	-	-	43	19			<5	mg/kg	TM30/PM15
Mercury #M	-	-	-	-	-	-	<0.1	<0.1			<0.1	mg/kg	TM30/PM15
Nickel #M	-	-	-	-	-	-	11.0	19.4			<0.7	mg/kg	TM30/PM15
Selenium #M	-	-	-	-	-	-	<1	<1			<1	mg/kg	TM30/PM15
Vanadium	-	-	-	-	-	-	26	32			<1	mg/kg	TM30/PM15
Water Soluble Boron #M	-	-	-	-	-	-	0.8	1.4			<0.1	mg/kg	TM74/PM32
Zinc #M	-	-	-	-	-	-	91	45			<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	-	-	-	-	-	-	<0.04	0.23			<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	-	-	-	-	-	1.21	7.10			<0.03	mg/kg	TM4/PM8
Acenaphthene #M	-	-	-	-	-	-	2.24	20.89			<0.05	mg/kg	TM4/PM8
Fluorene #M	-	-	-	-	-	-	1.04	25.00$_{AA}$			<0.04	mg/kg	TM4/PM8
Phenanthrene #M	-	-	-	-	-	-	2.37	58.03$_{AA}$			<0.03	mg/kg	TM4/PM8
Anthracene #	-	-	-	-	-	-	1.35	15.09			<0.04	mg/kg	TM4/PM8
Fluoranthene #M	-	-	-	-	-	-	1.74	18.82			<0.03	mg/kg	TM4/PM8
Pyrene #	-	-	-	-	-	-	1.74	19.04			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	-	-	-	-	-	0.55	3.77			<0.06	mg/kg	TM4/PM8
Chrysene #M	-	-	-	-	-	-	0.43	4.06			<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	-	-	-	-	-	-	0.64	3.83			<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	-	-	-	-	-	0.56	3.19			<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	-	-	-	-	-	-	0.31	1.21			<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	-	-	-	-	-	0.06	0.23			<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	-	-	-	-	-	0.28	1.26			<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	-	-	-	0.11	0.33			<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	-	-	-	-	-	14.5	181.8			<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	-	-	-	14.63	182.08			<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	-	-	-	-	-	0.46	2.76			<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	-	-	-	-	-	0.18	1.07			<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	-	-	-	-	-	91	99			<0	%	TM4/PM8
Mineral Oil (C10-C40)	-	-	-	-	-	-	<30	178			<30	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A069641-5
Location: Mill St Eastleigh
Contact: Sarah Roberts
JE Job No.: 16/8908

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24			LOD/LOR	Units	Method No.
Sample ID	SIDE EAST	SIDE SOUTH EAST	SIDE WEST	SIDE NORTH	BASE EAST	BASE WEST	STOCKPILE 1	STOCKPILE 2					
Depth	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	1.6	2.0							
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T					
Sample Date	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016					
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1			<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2			<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	<4	17	<4			<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7	<7	<7	25	13			<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	16	<7	<7	<7	<7	9	44			<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	<19	<19	<19	<19	-	-			<19	mg/kg	TM5/TM36/PM12/PM16
>C35-C44	-	-	-	-	-	-	<7	<7			<7	mg/kg	TM5/PM16
Total aliphatics C5-44	-	-	-	-	-	-	52	57			<26	mg/kg	TM5/TM36/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2			<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	<4	53	<4	<4	<4	60	5			<4	mg/kg	TM5/PM16
>EC16-EC21	<7	13	74	<7	<7	<7	116	32			<7	mg/kg	TM5/PM16
>EC21-EC35	<7	179	58	<7	<7	<7	108	139			<7	mg/kg	TM5/PM16
>EC35-EC44	-	-	-	-	-	-	<7	10			<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	192	185	<19	<19	<19	-	-			<19	mg/kg	TM5/TM36/PM12/PM16
Total aromatics C5-44	-	-	-	-	-	-	284	186			<26	mg/kg	TM5/TM36/PM16
Total aliphatics and aromatics(C5-35)	<38	192	185	<38	<38	<38	-	-			<38	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-44)	-	-	-	-	-	-	336	243			<52	mg/kg	TM5/TM36/PM16
MTBE #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5	<5	12	<5			<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5	<5	<5	15	<5			<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5	<5	17	<5			<5	ug/kg	TM31/PM12
PCB 28 #	-	-	-	-	-	-	<5	<5			<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	-	<5	<5			<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	-	<5	<5			<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	-	<5	<5			<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	-	<5	<5			<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	-	<5	<5			<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	-	<5	<5			<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	-	<35	<35			<35	ug/kg	TM17/PM8
Phenol #M	-	-	-	-	-	-	<0.01	<0.01			<0.01	mg/kg	TM26/PM21

Client Name: WYG
Reference: A069641-5
Location: Mill St Eastleigh
Contact: Sarah Roberts
JE Job No.: 16/8908

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24			LOD/LOR	Units	Method No.
Sample ID	SIDE EAST	SIDE SOUTH EAST	SIDE WEST	SIDE NORTH	BASE EAST	BASE WEST	STOCKPILE 1	STOCKPILE 2					
Depth	0.5-1.5	0.5-1.5	0.5-1.5	0.5-1.5	1.6	2.0							
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T					
Sample Date	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016	13/05/2016					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016	14/05/2016					
Natural Moisture Content	11.3	20.7	15.2	20.8	29.9	19.7	12.7	8.6			<0.1	%	PM4/PM0
Hexavalent Chromium #	-	-	-	-	-	-	<0.3	<0.3			<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	-	-	-	-	-	-	193	145			<3	mg/kg	TM38/PM20
Free Cyanide	-	-	-	-	-	-	<0.5	<0.5			<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-	-	-	-	-	1.69	0.93			<0.02	%	TM21/PM24
Fraction Organic Carbon	-	-	-	-	-	-	0.017	0.009			<0.001	None	TM21/PM24
ANC at pH4	-	-	-	-	-	-	0.92	0.32			<0.03	mol/kg	TM77/PM0
ANC at pH7	-	-	-	-	-	-	0.04	<0.03			<0.03	mol/kg	TM77/PM0
Loss on Ignition #	-	-	-	-	-	-	3.8	4.0			<1.0	%	TM22/PM0
pH #M	-	-	-	-	-	-	8.31	8.01			<0.01	pH units	TM73/PM11
Sample Type	Clayey Sand	Clay	Clayey Sand	Clayey Sand	Sand	Sand	Clay	Clay				None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Light Brown	Light Brown	Medium Brown	Medium Brown				None	PM13/PM0
Other Items	stones	stones, clinker	stones	stones	wet	NA	stones, sand	stones, roots				None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

CEN 10:1 LEACHATE RESULTS PrEN 12547-2

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	19.4
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	83.8
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/8908**			
Sample No	**21**			
Client Sample No	**STOCKPILE 1**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other				
Sample Date	**13/05/2016**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.69	3	5	6
Loss on Ignition (%)	3.8	-	-	10
Sum of BTEX (mg/kg)	0.044	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 17(mg/kg)	14.63	100	-	-
pH (pH Units)	8.31	-	>6	-
ANC to pH 7 (mol/kg)	0.04	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.92	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.014	0.14	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.003	0.03	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	1.5	15	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	9.74	97.4	1000	20000	50000
Total Dissolved Solids	90	900	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	5	50	500	800	1000

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	6.7
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	93.7
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**16/8908**			
Sample No	**24**			
Client Sample No	**STOCKPILE 2**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other				
Sample Date	**13/05/2016**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.93	3	5	6
Loss on Ignition (%)	4.0	-	-	10
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	178	500	-	-
PAH Sum of 17(mg/kg)	182.08	100	-	-
pH (pH Units)	8.01	-	>6	-
ANC to pH 7 (mol/kg)	<0.03	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.32	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	<0.0025	<0.025	0.5	2	25
Barium	0.015	0.15	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	<0.007	<0.07	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	<0.002	<0.02	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	<0.002	<0.02	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	0.003	0.03	4	50	200
Chloride	0.7	7	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	53.33	533.3	1000	20000	50000
Total Dissolved Solids	162	1620	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	9	90	500	800	1000

Client Name: WYG
Reference: A069641-5
Location: Mill St Eastleigh
Contact: Sarah Roberts

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:



Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
16/8908	1	STOCKPILE 1		20	18/05/2016	**General Description (Bulk Analysis)**	Soil/Stone
					18/05/2016	**Asbestos Fibres**	NAD
					18/05/2016	**Asbestos Fibres (2)**	NAD
					18/05/2016	**Asbestos ACM**	NAD
					18/05/2016	**Asbestos ACM (2)**	NAD
					18/05/2016	**Asbestos Type**	NAD
					18/05/2016	**Asbestos Type (2)**	NAD
					18/05/2016	**Asbestos Level Screen**	NAD
16/8908	1	STOCKPILE 2		23	18/05/2016	**General Description (Bulk Analysis)**	Soil/Stone
					18/05/2016	**Asbestos Fibres**	NAD
					18/05/2016	**Asbestos Fibres (2)**	NAD
					18/05/2016	**Asbestos ACM**	NAD
					18/05/2016	**Asbestos ACM (2)**	NAD
					18/05/2016	**Asbestos Type**	NAD
					18/05/2016	**Asbestos Type (2)**	NAD
					18/05/2016	**Asbestos Level Screen**	NAD

Client Name: WYG

Matrix : Solid

Reference: A069641-5

Location: Mill St Eastleigh

Contact: Sarah Roberts

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
16/8908	1	SIDE EAST	0.5-1.5	1-3	GRO	Solid Samples were received at a temperature above 9°C.
16/8908	1	SIDE SOUTH EAST	0.5-1.5	4-6	GRO	Solid Samples were received at a temperature above 9°C.
16/8908	1	SIDE WEST	0.5-1.5	7-9	GRO	Solid Samples were received at a temperature above 9°C.
16/8908	1	SIDE NORTH	0.5-1.5	10-12	GRO	Solid Samples were received at a temperature above 9°C.
16/8908	1	BASE EAST	1.6	13-15	GRO	Solid Samples were received at a temperature above 9°C.
16/8908	1	BASE WEST	2.0	16-18	GRO	Solid Samples were received at a temperature above 9°C.
16/8908	1	STOCKPILE 1		19-21	EPH	Sample received in inappropriate container
16/8908	1	STOCKPILE 1		19-21	GRO	Solid Samples were received at a temperature above 9°C.
16/8908	1	STOCKPILE 2		22-24	EPH	Sample received in inappropriate container
16/8908	1	STOCKPILE 2		22-24	GRO	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 16/8908

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

JE Job No: 16/8908

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM12/PM16	CWG GC-FID			AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

JE Job No: 16/8908

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified USEPA 8163. Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM22	Modified USEPA 160.4. Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (450°C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes

JE Job No: 16/8908

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen. Samples are extracted using an orbital shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	

JE Job No: 16/8908

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Appendix C – Cap Validation Reports

N.B to reduce file size, chemical test results for imported material included in first report only. Data applies to all plots.

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plot 1-5 & 90, 91\A069641-5 LetRpt Plots 1-5 90,91.doc

Date 19th May 2016

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 1 to 5, 90 & 91.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 1 to 5, 90 & 91 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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> *condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.*

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 1 to 5, 90 & 91 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 85, 86 and 92 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 12th and 13th May 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 1 to 5, 90 & 91.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 1	400mm	300mm	**700mm***
Plot 2	400mm	200mm	**600mm**
Plot 3	500mm	100mm	**600mm**
Plot 4	300mm	400mm	**700mm**
Plot 5	300mm	400mm	**700mm**
Plot 90	400mm	200mm	**600mm**
Plot 91	300mm	300mm	**600mm**

* Minimum thickness - base of cap not reached

Completion Statement - Plots 1 to 5, 90 & 91

This letter report is solely in reference to Plots 1 to 5, 90 & 91 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 1 to 5, 90 & 91 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 1 to 5, 90 & 91 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 1 to 5, 90 & 91.

No comment is made on the condition of the remainder of the site.

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Yours Sincerely,
For **WYG ENVIRONMENT**





Sarah Roberts
Senior Geo-Environmental Engineer

Luzia Kathriner
Geo-Environmental Engineer

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Chemical Laboratory Results

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FIGURES

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DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

N

SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

Bishopstoke

North Stoneham

Itchen Valley Country Park

Contains Ordnance Survey data © Crown copyright and database right 2014



REV	DESCRIPTION	BY	CHK	APP	DATE

5th FLOOR, LONGCROSS COURT
47 NEWPORT ROAD
CARDIFF
CF24 0AD

TEL: +44 (0)29 2032 0769
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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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N



WYG Environment 5th Floor, Longcross Court, 47 Newport Road, Cardiff Tel: 02920 829200 Fax: 02920 455321 Environmental Consultancy Ground Engineering Services	Project: Mill Street, Eastleigh	Drawing Title: Site Layout Plan	
	Client: Taylor Wimpey PLC	Checked by: SR	Drawing No.: Figure 2

CHEMICAL LABORATORY DATA

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Client:

Waltet Materials Ltd
Unit 4, Andes Road
Nursling Industrial Estate
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OEMAChem Ltd
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Brunel Road
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Southampton
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Telephone +44 (0)2380 707686
Email: hello@oemachem.co.uk
www.oemachem.co.uk

Our Ref: **OCLAsk15201**

Client Ref: **Verbal Mark**

Date: **Tuesday, 22 September 2015**

Soil Analysis Report OCLA

Sampled:	**09/09/2015**	Sample I.D	**4234-0**
Received:	**09/09/2015**	Vessel	**N/A**
Product:	**Soil – Loamy Sand**	Type of Sample	**Soil**
Sampled By:	**Client**	Location:	**Bunny Lane**

Table 1 : Soil Texture (% m/m)

Texture	Method	Sample 4234-0	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Clay Content	5.05	10		5 - 35				
Silt Content	5.05	20		0 - 65				
Sand Content	5.05	70		30 - 85				
Soil Texture Class	5.05	Sandy Loam		Note; See soil texture triangle in BS3882:2015 for allowed soils				

Table 2 : Soil Organic Matter Content (%)

	Method	Sample 4234-0	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Clay (5 – 20 %)	6.07	3	3 - 20	3 - 30	3 - 30	2 - 20	2 - 20	2 - 20
Clay (20 – 35%)	-	-	5 to 20	5 to 30	5 - 30	2 - 20	2 - 20	2 - 20

Table 3: Maximum Coarse Fragment Content (% (m/m))

	Sample 4234-0	Multipurpose Topsoil Range	Specific Purpose Range				
			Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
> 2 mm	24	0 – 30					
> 20 mm	0	0 – 10					
> 50 mm	0	0					

Table 4: Chemical Analysis (air-dried, sieved (< 2 mm) soil)

Analyte	Method	Sample 4234-0	Multipurpose Topsoil Range			Specific Purpose Range		
				Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Soil pH Value	5.03	7.70	5.5 – 8.5	3.5 – 5.5	7.5 – 9.0	3.5 – 9.0	3.5 – 5.5	7.5 – 9.0
Calcium Carbonate (%)	6.07	18	—	—	>1	—		> 1

Table 5: Available Plant Nutrient Content

	Method	Sample 4234-0	Multipurpose Topsoil Range	Specific Purpose Range				
				Acidic	Calcareous	Low Fertility	Low fertility Acidic	Low fertility Calcareous
Nitrogen % m/m		0.23	>0.15	>0.15	>0.15	-	-	-
Extractable Phosphorus mg/l	6.08	<3.0	16 - 140	16 - 140	16 - 140	<20	<20	<20
Extractable Potassium mg/l	6.08	232	121 - 1500	121 - 1500	121 - 1500	-	-	-
Extractable Magnesium	6.08	75.9	51 - 600	51 - 600	51 - 600	-	-	-
Carbon:Nitrogen ratio	6.08	16.6:1	< 20:1	< 20:1	< 20:1	<35:1	<35:1	<20:1
Soil Electrical Conductivity		1856.0	3300					
Exchangeable sodium percentage % [1]	6.08	_	< 15					

[1] Need be measured only if the electrical conductivity is greater than 2800 $\mu S\ cm^{-1}$.

Table 6: Phytotoxic Contaminants (by soil pH) (mg/kg) analyses carried out on air dried samples

	Method	Sample 4234-0	Multipurpose and specific purpose topsoils		
Soil pH Range			< 6.0	6.0 – 7.0	> 7.0
Zinc	6.08	126	< 200	< 200	< 300
Copper	6.08	34.7	< 100	< 135	< 200
Nickel	6.08	<14.0	< 60	< 75	< 110

Table 7: Additional Physical characteristics

	Method	Sample 4234-0	Multipurpose and specific purpose topsoils
Water content	6.01	9.2	-
Total Organic Carbon	6.07	1.7	-
Visible contaminants	—	0.47% Glass	<0.5% visible contaminants <0.25% plastics

Table 8: ICRCL metals (all results in mg/kg/dry weight)

Analyte	Method	Sample 4234-0	Soil Guideline Values		
			Residential	Allotment	Commercial
Arsenic	5.03,6.08	5.5	32	43	640
Antimony	5.03,6.08	<10.0	-	-	-
WS Boron	5.03,6.08	<20.0	-	3	-
Cadmium	5.03,6.08	1.9	10	1.8	230
Chromium (total)	5.03,6.08	20.0	600	600	1000
Cobalt	5.03,6.08	6.0	-	-	-
Copper	5.03,6.08	34.7	2330	524	71700
Mercury	5.03,6.08	<1.00	1.0	26	26
Molybdenum	5.03,6.08	<1.0	-	-	-
Nickel	5.03,6.08	<14.0	130	230	1800
Lead	5.03,6.08	102	500	500	2000
Selenium	5.03,6.08	<3.0	350	120	13000
Thallium	5.03,6.08	<5.0	-	-	-
Vanadium	5.03,6.08	26.7	75	18	3160
Zinc	5.03,6.08	126	3750	618	66500

Comments (including details of weeds and other visible contaminants - all comments are beyond the scope of our accreditation)

This sample does meet the requirements of BS3882 and would be considered as:

✓	Multi-purpose Topsoil
X	Acidic
✓	Calcareous
✓	Low Fertility
X	Low fertility Acidic
✓	Low fertility Calcareous

Mark Chiverton



Managing Director
Oemachem Ltd

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Our Ref: SI3753 29 July 2015

D. R. Groundworks Limited
First Floor Office
Building 2
Lake Court
Hursley
Winchester
SO21 2LD

Dear Sirs

SITE AT – WALWORTH ROAD, PICKET PIECE, ANDOVER

Ten samples were collected from a large stockpile of topsoils at this site on the 20th of July 2015. The stockpile comprised chalk fines and chalk gravel. The samples were recovered from ten locations over and within the stockpile using a hand auger.

A full environmental assessment comprising a desk study and follow on physical investigations have not been carried out by Terramech at this site. Identification of a list of contaminants of concern was not possible. On this basis the samples were tested for a basic suite of metal and hydrocarbon based contaminants specified by the client.

Assessment Criteria

For the assessment of the risk posed to human health the measured soil concentrations for particular contaminants are compared to acceptable limits set out in two main guidance reports. Both give values derived using the Environment Agency CLEA model.

Our assessments are based on a hierarchy of CLEA model derived values where the Environment Agency Soils Guideline Values (SGVs - 2008) and Suitable For Use Values (S4UL - 2015) from the Chartered Institute of Environmental Health are most preferred, followed by values derived by Terramech using the CLEA model. These guideline values are appended.

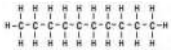
The generic exposure scenario for commercial land use / residential land use, where occupants are not expected to grow and consume fruits and vegetables on the site, has been selected for the assessment of soil contamination concentrations.

Metal Compounds

Analysis showed that concentrations of metals detected in the samples were generally seen to be low and none of the measured concentrations exceeded the respective guideline values.

The trace concentrations seen were entirely consistent with naturally occurring metals. Iron is the most common and gives some clays and silts their orange brown colour, other metals are present as a result of the origin of the Iron and it is rare for any Iron present to be pure and not contain traces of Arsenic, Nickel, Copper, Tin and Zinc among others.

The samples were analysed using a banded analysis method where hydrocarbon concentrations are given for individual hydrocarbon weight bands spanning the gasoline and diesel ranges.

The results for each weight band are also divided in to two main hydrocarbon groups Aliphatic Hydrocarbons (open chain molecules ) and Aromatic Hydrocarbons (ringed molecules ).

The Hydrocarbon totals in each risk band were below detection limits in all ten samples apart from traces detected in sample 3 in the C_{21} to C_{35} Aliphatic and Aromatic bands. The trace concentrations were well below their respective individual guideline values.

Poly-cyclic Aromatic Hydrocarbons

Poly-cyclic Aromatic Hydrocarbons (PAH) are present in coal tars, combustion by-products and fuels and they are one of the most common forms of soil contamination, often as a legacy of the UK's industrial past.

These tarry hydrocarbons are made up of long chains of hydrogen and carbon atoms, which unlike the open ended chains seen in the Aliphatic group, have linked to form rings. There are many different configurations of these rings resulting in a vast number of different compounds. We have focused our attention on a group of sixteen of these hydrocarbon compounds which were identified by the United States Environmental Protection Agency as being the most common and/or the most toxic.

This showed that although present, none of the sixteen were present at concentrations exceeding their respective individual guideline values.

Phenols

Phenols (total Monohydric Phenols includes Cresols or Methylphenol and Chlorinated Phenols) were below detection limits in all samples and therefore the concentrations did not exceed the guideline value for Phenol published in the new Soil Guideline Value (SGV) report.

Mono-cyclic Aromatic Hydrocarbons

The analysis did not detect any of the specific Mono-cyclic Aromatics (single ring molecule ) such as Benzene and its derivatives (Toluene, Ethylbenzene and Xylenes) nor did it detect the petrol additive MTBE.

Cyanide Compounds

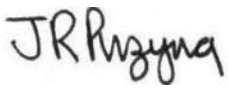
Cyanide is a common industrial contaminant and can be used in the case hardening of steel, or it can be present as a combustion by product. Older industries such as town gas works produced Cyanide based waste called Blue Billy (Ferric Cyanide).

The analysis did not detect any Cyanide Compounds. The testing was for total Cyanides which can include Thiocyanates, one of the most complex form of Cyanide formed by metabolisation by plants and animals, Cyanide Salts which involve metals such as Iron (which forms Blue Billy), and free Cyanide which is the most toxic.

Conclusions

The samples were seen to contain very low (mostly below detection limits) concentrations of hydrocarbons and concentrations of metals that are consistent with natural soils. None of the contaminants considered in the analysis exceeded the guideline values set out for residential gardens.

Yours sincerely



Julian Puzyna BEng. Hons.
Terramech Investigations Ltd

Jones Environmental Laboratory

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Terramech Investigations Ltd
183 Long Lane
Tilehurst
Reading
Berkshire
RG31 6YW

Attention :	Neil Barker
Date :	28th July, 2015
Your reference :	3753
Our reference :	Test Report 15/10316 Batch 1
Location :	Walworth Road, Picket Piece, Andover
Date samples received :	21st July, 2015
Status :	Final report
Issue :	1

Ten samples were received for analysis on 21st July, 2015 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: Terramech Investigations Ltd
Reference: 3753
Location: Walworth Road, Picket Piece, Andover
Contact: Neil Barker
JE Job No.: 15/10316

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	LOD/LOR	Units	Method No.
Sample ID	3753/1	3753/2	3753/3	3753/4	3753/5	3753/6	3753/7	3753/8	3753/9	3753/10			
Depth													
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	20/07/2015 08:00	20/07/2015 08:10	20/07/2015 08:20	20/07/2015 08:30	20/07/2015 08:40	20/07/2015 08:50	20/07/2015 09:00	20/07/2015 09:10	20/07/2015 09:20	20/07/2015 09:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015			
Arsenic #M	2.4	3.3	1.7	1.3	1.2	2.3	2.4	2.2	1.5	3.9	<0.5	mg/kg	TM30/PM15
Barium #M	40	88	33	22	21	26	35	36	21	39	<1	mg/kg	TM30/PM15
Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM30/PM15
Cadmium #M	0.4	0.6	0.4	0.4	0.5	0.3	0.5	0.5	0.4	0.5	<0.1	mg/kg	TM30/PM15
Chromium #M	25.3	21.2	19.4	20.1	10.2	41.2	16.3	20.2	26.9	16.2	<0.5	mg/kg	TM30/PM15
Copper #M	3	4	4	2	2	3	3	3	2	3	<1	mg/kg	TM30/PM15
Lead #M	9	12	9	7	8	8	9	10	8	11	<5	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #M	5.4	7.9	5.3	4.1	4.0	4.8	5.1	5.5	3.3	7.8	<0.7	mg/kg	TM30/PM15
Selenium #M	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Vanadium	9	17	10	8	6	10	9	11	7	14	<1	mg/kg	TM30/PM15
Water Soluble Boron #M	0.6	1.0	0.7	0.3	0.5	0.6	0.7	0.7	0.8	0.4	<0.1	mg/kg	TM74/PM32
Zinc #M	36	38	47	19	21	24	32	37	19	36	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.16	0.09	0.06	0.05	<0.03	0.04	0.04	0.06	0.11	0.21	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.23	0.21	0.22	0.15	0.08	0.11	0.08	0.12	0.19	0.63	<0.03	mg/kg	TM4/PM8
Pyrene #	0.19	0.17	0.17	0.14	0.08	0.10	0.08	0.11	0.16	0.59	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.11	0.11	0.11	0.10	0.07	0.08	0.08	0.09	0.12	0.36	<0.06	mg/kg	TM4/PM8
Chrysene #M	0.15	0.17	0.14	0.15	0.08	0.09	0.07	0.09	0.12	0.41	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.22	0.22	0.24	0.24	0.14	0.15	0.13	0.14	0.24	0.69	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.15	0.15	0.15	0.18	0.09	0.11	0.08	0.09	0.15	0.45	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.08	0.09	0.10	0.12	0.06	0.07	0.05	0.05	0.09	0.30	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.07	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.06	0.07	0.08	0.08	0.05	0.04	<0.04	<0.04	0.07	0.27	<0.04	mg/kg	TM4/PM8
PAH 16 Total	1.4	1.3	1.3	1.2	0.7	0.8	0.6	0.8	1.3	4.1	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.16	0.16	0.17	0.17	0.10	0.11	0.09	0.10	0.17	0.50	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.06	0.06	0.07	0.07	0.04	0.04	0.04	0.04	0.07	0.19	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	96	95	102	100	92	94	96	104	101	102	<0	%	TM4/PM8

Client Name: Terramech Investigations Ltd
Reference: 3753
Location: Walworth Road, Picket Piece, Andover
Contact: Neil Barker
JE Job No.: 15/10316

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	LOD/LOR	Units	Method No.
Sample ID	3753/1	3753/2	3753/3	3753/4	3753/5	3753/6	3753/7	3753/8	3753/9	3753/10			
Depth													
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	20/07/2015 08:00	20/07/2015 08:10	20/07/2015 08:20	20/07/2015 08:30	20/07/2015 08:40	20/07/2015 08:50	20/07/2015 09:00	20/07/2015 09:10	20/07/2015 09:20	20/07/2015 09:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015	21/07/2015			
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	17	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>EC21-EC35	<7	<7	35	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	<19	35	<19	<19	<19	<19	<19	<19	<19	<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	<38	<38	<38	<38	<38	<38	<38	<38	<38	<38	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	14.4	12.1	14.1	15.2	13.8	10.0	20.2	17.1	13.2	18.5	<0.1	%	PM4/PM0
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
pH #M	8.50	8.41	8.58	8.55	8.44	8.47	8.52	8.52	8.42	8.49	<0.01	pH units	TM73/PM11
Sample Type	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay		None	PM13/PM0
Sample Colour	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey		None	PM13/PM0
Other Items	stones, chalk	stones, chalk	stones, chalk	stones, chalk	stones, chalk	stones, chalk	stones, chalk	stones, chalk	stones, chalk	stones, chalk		None	PM13/PM0

Client Name: Terramech Investigations Ltd

Reference: 3753

Location: Walworth Road, Picket Piece, Andover

Contact: Neil Barker

Matrix : Solid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
15/10316	1	3753/1		1-3	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/2		4-6	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/3		7-9	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/4		10-12	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/5		13-15	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/6		16-18	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/7		19-21	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/8		22-24	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/9		25-27	GRO	Solid Samples were received at a temperature above 9°C.
15/10316	1	3753/10		28-30	GRO	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 15/10316

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 (UKAS) accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 15/10316

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID.	PM12/PM16	CWG GC-FID			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes

JE Job No: 15/10316

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes

Contamination Assessment Criteria

List 1 (Soils Assessment Criteria for Human Health)

1A) - Metals
1B) - Aliphatic Hydrocarbons
1C) - Aromatic Hydrocarbons
1D) - BTEX (Monocyclic Aromatic Hydrocarbons)
1E) - PAH (Poly-cyclic Aromatic Hydrocarbons)
1F) - PCB (Poly Chlorinated Bi-Phenyls)
1G) - Chloroalkanes and Alkenes
1H) - Explosives
1I) - Pesticides
1J) - Chlorobenzenes
1K) - Phenol and Chlorophenol
1L) - Other

At this time SGVs have been published by the Environment Agency for Arsenic, Cadmium, Nickel, Mercury, Selenium, Benzene, Toluene, Ethylbenzene, Xylene and Phenol together with Dioxins Furans and Dioxin Like PCBs. These were calculated using the CLEA model (v1.04) and Environment Agency guidance documents SR2 (Human Health Toxicological Assessment of Contaminants in Soil) and SR3 (Updated Technical Background to the CLEA Model).

Further numbers of contaminants were assessed on this basis using the CLEA Model by CIEH/LQM (The Chartered Institute of Environmental Health and Land Quality Management Ltd) and guideline values were published in their report on Generic Assessment Criteria for Human Health Assessments (2009). This 2009 guidance has now been replaced by new S4UL values (Suitable '4' Use Levels) which are intended by CIEH/LQM to provide a complete and updated replacement for the values published in their 2009 report (see CIEH/LQM S4UL – 1.1). The S4UL values are the copyright of Land Quality Management Ltd and are reproduced with permission; Publication Number S4UL3262 - All rights reserved,

Where there is no Environment Agency SGV or S4UL, Terramech Investigations have derived values using the CLEA Model with old TOX reports as well as the SR2 report and the SR3 report, as suggested by the Environment Agency.

The assessments should be based on a hierarchy where the Environment Agency SGVs and S4UL from the Chartered Institute of Environmental Health are most preferred, followed by values derived by Terramech using the CLEA model.

Note on C4SL values

The C4SL values (Category 4 Screening Levels) published by DEFRA in 2014 (SP1010) were calculated using the CLEA Model. These values were based on a notional Low Level of Toxicological concern (LLTC) and not the minimal or tolerable risk Health Condition Values (HCV) basis, as defined in the Environment Agency SR2 document. The problems of this approach are outlined in the introductory paragraphs of the CIEH/LQM S4UL report section 1.2. Further comments are made in the CIEH/LQM C4SL Position Statement and SILC (Specialists in Land Condition) letter to DEFRA April 2013 with regard to their reservations with regard to the new Category 4 Screening Levels. On this basis Terramech have not adopted the C4SL values for use in contamination assessments.

List 2 (Assessment Criteria for Buried Water Supply Pipes)

Our recommendations are based on the Water Regulation Advisory Scheme information and guidance note No 9-04-03' October 2002 'The Selection of Materials for Water Supply Pipes to be Laid in Contaminated Land' however, the water utility companies now assess contaminants on the basis of their own guidances and we cannot comment on compliance with all these individual guidances.

List 3 (Assessment Criteria For Soil Disposal)

Assessment of soils destined for landfills takes two stages. The first is site characterisation, the second stage is compliance testing to assess the leachability or solubility of any contaminants that are present at elevated concentrations.

Characterisation is carried out by comparing the soil results with the SGVs and GACs in List 1 with respect to human health as well as groundwater protection. If the soils are seen to contain unacceptable concentrations of contaminants then leachate tests will be required to fully classify the soils. The leachate results are then compared with thresholds for different waste categories as set out in BS EN 12457-2.

List 4 (Groundwater Assessment Criteria)

Assessment of groundwater analysis is carried out using Water Supply (Water Quality) Regulations 2000 (SI 2000/3184 as amended) or the Environmental Quality Standard (EQS) values for fresh or saltwater depending on which is the most applicable background water quality scenario for compliance. Where the groundwater is not abstracted and not supplying water to springs or rivers, the results from upstream groundwater analysis would be used for comparison.

When investigations highlight the presence of soil contaminants at concentrations exceeding what could be expected naturally, the measured contaminant concentrations in soil would be assessed at tier 1 stage with respect to the risk posed to groundwater using the Environment Agency R&D Publication 20 Remedial Targets Worksheet, Release 2.2a.

Generic values for soil properties and chemical partition coefficients for contaminants were taken from the Environment Agency CLEA Model (v1.06) and supporting documents under the SC050021 reference. Exceedance of these values should not be taken as demonstrating a risk to controlled waters. Tier 2 and Tier 3 assessments would need to be carried out if exceedances are noted at Tier 1.

Assessment Criteria for Ground Gases

Ground gases are assessed on the basis of the CIRIA C665 document (Assessing Risks Posed by Hazardous Ground Gases to Buildings) which dictates the monitoring period and the frequency of visits required. Worst case flow rates and gas concentrations are then used to derive a Gas Screening Value (GSV) from which a characteristic situation and then a level of protection is defined.

Assessment Criteria for Asbestos

Guideline values for Asbestos concentrations in soils cannot be defined since the fibre type, the fibre binding, the length of fibre, soil moisture content and soil type affect the actual fibre release potential of asbestos contaminated soil.

Where quantification has been carried out we estimate a potential fibre exposure on a site specific basis using the calculations set out in CIRIA C733 Asbestos in Soil and Made Ground (2014).

List 1A (Metals mg/kg)				
Contaminant	**Generic Exposure Scenario**	**Terramech (CLEA v1.06 & S4UL methodology)**	**Environment Agency SGV (CLEA v1.04)**	**CIEH/LQM S4UL 2015**
Arsenic	Residential with plant uptake		32	**37**
	Residential without plant uptake		Not Assessed	40
	Allotment		43	43
	Commercial		640	640
	Public Open Space (Residential)		Not Assessed	79
	Public Open Space (Park)		Not Assessed	170
Beryllium	Residential with plant uptake		Not Assessed	1.7
	Residential without plant uptake		Not Assessed	1.7
	Allotment		Not Assessed	35
	Commercial		Not Assessed	12
	Public Open Space (Residential)		Not Assessed	2.2
	Public Open Space (Park)		Not Assessed	63
Boron	Residential with plant uptake		Not Assessed	Not Assessed
	Residential without plant uptake		Not Assessed	Not Assessed
	Allotment		Not Assessed	Not Assessed
	Commercial		Not Assessed	Not Assessed
	Public Open Space (Residential)		Not Assessed	Not Assessed
	Public Open Space (Park)		Not Assessed	Not Assessed
Cadmium	Residential with plant uptake		10	11
	Residential without plant uptake		Not Assessed	85
	Allotment		1.8	1.9
	Commercial		230	190
	Public Open Space (Residential)		Not Assessed	120
	Public Open Space (Park)		Not Assessed	532
Chromium III	Residential with plant uptake		Not Assessed	910
	Residential without plant uptake		Not Assessed	910
	Allotment		Not Assessed	18000
	Commercial		Not Assessed	8600
	Public Open Space (Residential)		Not Assessed	1500
	Public Open Space (Park)		Not Assessed	3300
Chromium VI	Residential with plant uptake		Not Assessed	6
	Residential without plant uptake		Not Assessed	6
	Allotment		Not Assessed	1.8
	Commercial		Not Assessed	33
	Public Open Space (Residential)		Not Assessed	7.7
	Public Open Space (Park)		Not Assessed	220
Copper	Residential with plant uptake		Not Assessed	2400
	Residential without plant uptake		Not Assessed	7100
	Allotment		Not Assessed	520
	Commercial		Not Assessed	68000
	Public Open Space (Residential)		Not Assessed	12000
	Public Open Space (Park)		Not Assessed	44000
Lead	Residential with plant uptake	82 (4)	450 (old SGV) (5)	Not Assessed
	Residential without plant uptake	82 (4)	450 (old SGV) (5)	Not Assessed
	Allotment		Not Assessed	Not Assessed
	Commercial	1100 (4)	750 (old SGV) (5)	Not Assessed
	Public Open Space (Residential)		Not Assessed	Not Assessed
	Public Open Space (Park)		Not Assessed	Not Assessed
Inorganic Mercury	Residential with plant uptake		170	40
	Residential without plant uptake		Not Assessed	56
	Allotment		80	19
	Commercial		3600	1100
	Public Open Space (Residential)			120
	Public Open Space (Park)			240
Elemental Mercury	Residential with plant uptake		1	1.2
	Residential without plant uptake		Not Assessed	1.2
	Allotment		26	21
	Commercial		26	25.8
	Public Open Space (Residential)			16
	Public Open Space (Park)			25.8
Methyl Mercury	Residential with plant uptake		11	11
	Residential without plant uptake		Not Assessed	15
	Allotment		8	6
	Commercial		410	320
	Public Open Space (Residential)			40
	Public Open Space (Park)			68
Nickel	Residential with plant uptake		130	180
	Residential without plant uptake		Not Assessed	180
	Allotment		230	230
	Commercial		1800	980
	Public Open Space (Residential)			230
	Public Open Space (Park)			3400

List 1A cont. (Metals mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 2
Selenium	Residential with plant uptake		350	250
	Residential without plant uptake		Not Assessed	430
	Allotment		120	88
	Commercial		13000	12000
	Public Open Space (Residential)			1100
	Public Open Space (Park)			1800
Vanadium	Residential with plant uptake		Not Assessed	410
	Residential without plant uptake		Not Assessed	1200
	Allotment		Not Assessed	91
	Commercial		Not Assessed	9000
	Public Open Space (Residential)		Not Assessed	2000
	Public Open Space (Park)		Not Assessed	5000
Zinc	Residential with plant uptake		Not Assessed	3700
	Residential without plant uptake		Not Assessed	40000
	Allotment		Not Assessed	620
	Commercial		Not Assessed	730000
	Public Open Space (Residential)		Not Assessed	8100
	Public Open Space (Park)		Not Assessed	17000
Free Cyanide	Residential with plant uptake		Not Assessed	Not Assessed
	Residential without plant uptake		Not Assessed	Not Assessed
	Allotment		Not Assessed	Not Assessed
	Commercial		Not Assessed	Not Assessed
	Public Open Space (Residential)		Not Assessed	Not Assessed
	Public Open Space (Park)		Not Assessed	Not Assessed
Complex Cyanide	Residential with plant uptake		Not Assessed	Not Assessed
	Residential without plant uptake		Not Assessed	Not Assessed
	Allotment		Not Assessed	Not Assessed
	Commercial		Not Assessed	Not Assessed
	Public Open Space (Residential)		Not Assessed	Not Assessed
	Public Open Space (Park)		Not Assessed	Not Assessed
Thiocyanate	Residential with plant uptake		Not Assessed	Not Assessed
	Residential without plant uptake		Not Assessed	Not Assessed
	Allotment		Not Assessed	Not Assessed
	Commercial		Not Assessed	Not Assessed
	Public Open Space (Residential)		Not Assessed	Not Assessed
	Public Open Space (Park)		Not Assessed	Not Assessed

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All values are subject to ongoing review
CIEH - Chartered Institute for Environmental Health
LQM - Land Quality Management (commercial research)
(1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6%
(2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8
(3) Internal limits exceeded during calculations
(4) under review by Terramech
(5) Value Withdrawn
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List 1B (Aliphatic Hydrocarbons mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 3
Aliphatic C5-C6	Residential with plant uptake		Not Assessed	42/78/160(1)
	Residential without plant uptake		Not Assessed	42/76/160(1)
	Allotment		Not Assessed	730/1700/3900(1)
	Commercial		Not Assessed	3200(304sol)/5900(558sol)/12000(1150sol) (1&3)
	Public Open Space (Residential)			570000/590000/60000(1)
	Public Open Space (Park)			95000(304sol)/130000(558sol)/180000(1150sol) (1&3)
Aliphatic C6-C8	Residential with plant uptake		Not Assessed	100/230/530(1)
	Residential without plant uptake		Not Assessed	100/230/530(1)
	Allotment		Not Assessed	2300/5600/13000(1)
	Commercial		Not Assessed	7800(144sol)/17000(322sol)/40000(736sol)(1&3)
	Public Open Space (Residential)		Not Assessed	600000/610000/620000(1)
	Public Open Space (Park)		Not Assessed	150000(144sol)/220000(322sol)/320000(736sol)(1&3)
Aliphatic C8-C10	Residential with plant uptake		Not Assessed	27/65/150(1)
	Residential without plant uptake		Not Assessed	27/65/150(1)
	Allotment		Not Assessed	320/77/1700(1)
	Commercial		Not Assessed	2000(78sol)/4800(190vap)11000(451vap) (1&3)
	Public Open Space (Residential)		Not Assessed	13000/13000/13000(1)
	Public Open Space (Park)		Not Assessed	14000(78sol)/18000(190vap)/21000(451vap) (1&3)
Aliphatic C10-C12	Residential with plant uptake		Not Assessed	130(48vap)/330(118vap)/760(283vap) (1&3)
	Residential without plant uptake		Not Assessed	130(48vap)/330(118vap)/760(283vap) (1&3)
	Allotment		Not Assessed	2200/4400/7300(1)
	Commercial		Not Assessed	9700(48sol)/23000(118vap)/47000(283vap) (1&3)
	Public Open Space (Residential)		Not Assessed	13000/13000/13000(1)
	Public Open Space (Park)		Not Assessed	21000(48sol)/230000(118vap)/24000(283vap) (1&3)
Aliphatic C12-C16	Residential with plant uptake		Not Assessed	1100(24sol)/2400(59sol)/4300(142sol) (1&3)
	Residential without plant uptake		Not Assessed	1100(24sol)/2400(59sol)/4300(144sol) (1&3)
	Allotment		Not Assessed	11000/13000/13000(1)
	Commercial		Not Assessed	59000(24sol)/82000(59sol)/90000(142sol) (1&3)
	Public Open Space (Residential)		Not Assessed	13000/13000/13000(1)
	Public Open Space (Park)		Not Assessed	25000(24sol)/25000(59sol)/26000(142sol) (1&3)
Aliphatic C16-C35	Residential with plant uptake		Not Assessed	65000(8.48sol)/92000(21sol)/110000 (1&3)
	Residential without plant uptake		Not Assessed	65000(8.48sol)/92000(21sol)/110000 (1&3)
	Allotment		Not Assessed	260000/270000/270000(1)
	Commercial		Not Assessed	1600000/1700000/1800000(1)
	Public Open Space (Residential)		Not Assessed	3800/3800/3800(1)
	Public Open Space (Park)		Not Assessed	3800/3800/3800(1)
Aliphatic C35-C44	Residential with plant uptake		Not Assessed	65000(8.48sol)/92000(21sol)/110000 (1&3)
	Residential without plant uptake		Not Assessed	65000(8.48sol)/92000(21sol)/110000 (1&3)
	Allotment		Not Assessed	260000/270000/270000(1)
	Commercial		Not Assessed	1600000/1700000/1800000(1)
	Public Open Space (Residential)		Not Assessed	3800/3800/3800(1)
	Public Open Space (Park)		Not Assessed	3800/3800/3800(1)
Aliphatic C44-C70	Residential with plant uptake		Not Assessed	1600/1800/1900
	Residential without plant uptake		Not Assessed	1600/1800/1900
	Allotment		Not Assessed	1200/2100/3000
	Commercial		Not Assessed	28000/28000/28000
	Public Open Space (Residential)		Not Assessed	3800/3800/3800
	Public Open Space (Park)		Not Assessed	7800/7800/7800

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LQM - Land Quality Management (commercial research)
(1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6%
(2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8
(3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets)
(4) under review by Terramech
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List 1C (Aromatic (Mono-cyclic and Poly-cyclic) Hydrocarbons mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 3
Aromatic C5-C7	Residential with plant uptake		Not Assessed	70/140/300(1)
	Residential without plant uptake		Not Assessed	370/690/1400(1)
	Allotment		Not Assessed	13/27/57(1)
	Commercial		Not Assessed	26000(1220sol)/46000(2260sol)/86000(4710sol) (1&3)
	Public Open Space (Residential)		Not Assessed	56000/56000/56000(1)
	Public Open Space (Park)		Not Assessed	76000(1220sol)/84000(2260sol)/92000(4710sol) (1&3)
Aromatic C7-C8	Residential with plant uptake		Not Assessed	130/290/660(1)
	Residential without plant uptake		Not Assessed	860/1800/3900(1)
	Allotment		Not Assessed	22/51/120(1)
	Commercial		Not Assessed	56000(869vap)/110000(1920sol)/180000(4360vap) (1&3)
	Public Open Space (Residential)		Not Assessed	56000/56000/56000(1)
	Public Open Space (Park)		Not Assessed	87000(869vap)/95000(1920sol)/100000(4360vap) (1&3)
Aromatic C8-C10	Residential with plant uptake		Not Assessed	34/83/190(1)
	Residential without plant uptake		Not Assessed	47/110/270(1)
	Allotment		Not Assessed	8.6/21/51(1)
	Commercial		Not Assessed	3500(613vap)/8100(1500vap)/17000(3580vap) (1&3)
	Public Open Space (Residential)		Not Assessed	5000/5000/5000(1)
	Public Open Space (Park)		Not Assessed	7200(613vap)/8500(1500vap)/9300(3580vap) (1&3)
Aromatic C10-C12	Residential with plant uptake		Not Assessed	74/180/380(1)
	Residential without plant uptake		Not Assessed	250/590/1200(1)
	Allotment		Not Assessed	13/31/74(1)
	Commercial		Not Assessed	16000(364sol)/28000(899sol)/34000(2150sol) (1&3)
	Public Open Space (Residential)		Not Assessed	5000/5000/5000(1)
	Public Open Space (Park)		Not Assessed	9200(364sol)/9700(899sol)/10000(1&3)
Aromatic C12-C16	Residential with plant uptake		Not Assessed	140/330/660(1)
	Residential without plant uptake		Not Assessed	1800/2300(419sol)/2500(1&3)
	Allotment		Not Assessed	23/57/130(1)
	Commercial		Not Assessed	36000/(169sol)/37000/38000(1&3)
	Public Open Space (Residential)		Not Assessed	5100/5100/5000(1)
	Public Open Space (Park)		Not Assessed	10000/10000/10000(1)
Aromatic C16-C21	Residential with plant uptake		Not Assessed	260/540/930(1)
	Residential without plant uptake		Not Assessed	1900/1900/1900(1)
	Allotment		Not Assessed	46/110/260(1)
	Commercial		Not Assessed	28000/28000/28000(1)
	Public Open Space (Residential)		Not Assessed	3800/3800/3800(1)
	Public Open Space (Park)		Not Assessed	7600/7700/7800(1)
Aromatic C21-C35	Residential with plant uptake		Not Assessed	1100/1500/1700(1)
	Residential without plant uptake		Not Assessed	1900/1900/1900(1)
	Allotment		Not Assessed	370/820/1600(1)
	Commercial		Not Assessed	28000/28000/28000(1)
	Public Open Space (Residential)		Not Assessed	3800/3800/3800(1)
	Public Open Space (Park)		Not Assessed	7800/7800/7900(1)
Aromatic C35-C44	Residential with plant uptake		Not Assessed	1100/1500/1700(1)
	Residential without plant uptake		Not Assessed	1900/1900/1900(1)
	Allotment		Not Assessed	370/820/1600(1)
	Commercial		Not Assessed	28000/28000/28000(1)
	Public Open Space (Residential)		Not Assessed	3800/3800/3800(1)
	Public Open Space (Park)		Not Assessed	7800/7800/7900(1)
Aromatic C44-C70	Residential with plant uptake		Not Assessed	1600/1800/1900(1)
	Residential without plant uptake		Not Assessed	1900/1900/1900(1)
	Allotment		Not Assessed	1200/2100/3000(1)
	Commercial		Not Assessed	28000/28000/28000(1)
	Public Open Space (Residential)		Not Assessed	3800/3800/3800(1)
	Public Open Space (Park)		Not Assessed	7800/7800/7900(1)

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List 1D (BTEX Mono-cyclic Aromatics mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 3
Benzene	Residential with plant uptake		0.33	0.87/0.17/0.37 (1)
	Residential without plant uptake		Not Assessed	0.38/0.70/1.4(1)
	Allotment		0.07	0.017/0.034/0.075(1)
	Commercial		95	27/47/90(1)
	Public Open Space (Residential)		Not Assessed	72/72/73(1)
	Public Open Space (Park)		Not Assessed	90/11/110(1)
Toluene	Residential with plant uptake		610	130/290/660
	Residential without plant uptake		Not Assessed	880(869vap)/1900/3900 (1&3)
	Allotment		120	22/51/120(1)
	Commercial		4400	56000(869 vap)/56000(1920 vap)/56000(4360 vap) (1&3)
	Public Open Space (Residential)		Not Assessed	5600/5600/5600(1)
	Public Open Space (Park)		Not Assessed	87000(869 vap)/95000(1920 vap)/100000(4360 vap) (1&3)
Ethylbenzene	Residential with plant uptake		350	47/110/260(1)
	Residential without plant uptake		Not Assessed	83/190/440(1)
	Allotment		90	16/39/91(1)
	Commercial		2800	5700(518 vap)/13000(1220 vap)/27000(2840 vap) (1&3)
	Public Open Space (Residential)		Not Assessed	24000/24000/25000(1)
	Public Open Space (Park)		Not Assessed	17000(518 vap)/22000(1220 vap)/27000(2840 vap) (1&3)
o-Xylene	Residential with plant uptake		250	60/140/330 (1)
	Residential without plant uptake		Not Assessed	88/210/480 (1)
	Allotment		160	28/67/160 (1)
	Commercial		2600	6600(478sol)/15000(1120sol)/33000(2620sol) (1&3)
	Public Open Space (Residential)		Not Assessed	41000/42000/43000 (1)
	Public Open Space (Park)		Not Assessed	17000(478sol)/24000(1120sol)/33000(2620sol) (1&3)
m-Xylene	Residential with plant uptake		240	59/140/320 (1)
	Residential without plant uptake		Not Assessed	52/190/450 (1)
	Allotment		180	31/74/170 (1)
	Commercial		3500	6200(625 vap)/14000(1470 vap)/31000(3460 vap) (1&3)
	Public Open Space (Residential)		Not Assessed	41000/42000/43000 (1)
	Public Open Space (Park)		Not Assessed	17000(625 vap)/24000(1470 vap)/32000(3460 vap) (1&3)
p-Xylene	Residential with plant uptake		230	56/130/310 (1)
	Residential without plant uptake		Not Assessed	79/180/430 (1)
	Allotment		160	29/69/160 (1)
	Commercial		3200	59000(576sol)/14000(1350sol)/30000(3170sol) (1&3)
	Public Open Space (Residential)		Not Assessed	41000/42000/43000 (1)
	Public Open Space (Park)		Not Assessed	17000(576sol)/23000(1350sol)/31000(3170sol) (1&3)

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(3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets)
(4) under review by Terramech
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List 1E (Poly-cyclic Aromatic Hydrocarbons mg/kg)				
Contaminant	**Generic Exposure Scenario**	**Terramech (CLEA v1.06 & S4UL methodology)**	**Environment Agency SGV (CLEA v1.04)**	**CIEH/LQM S4UL 2015 Part 4**
Acenaphthene	Residential with plant uptake		Not Assessed	210/610/1100(1)
	Residential without plant uptake		Not Assessed	3000/(57sol)/4700(141sol)/6000(336sol) (1&3)
	Allotment		Not Assessed	34/85/200(1)
	Commercial		Not Assessed	8400(57 sol)/97000(141 sol)/100000(1&3)
	Public Open Space (Residential)		Not Assessed	15000/15000/15000(1)
	Public Open Space (Park)		Not Assessed	29000/30000/30000(1)
Acenaphthylene	Residential with plant uptake		Not Assessed	170/420/920(1)
	Residential without plant uptake		Not Assessed	2900(86.1 sol)/4600(212 sol)/6000(506 sol) (1&3)
	Allotment		Not Assessed	28/69/160(1)
	Commercial		Not Assessed	83000(86.1 sol)/97000(212 sol)/100000(1&3)
	Public Open Space (Residential)		Not Assessed	15000/15000/15000(1)
	Public Open Space (Park)		Not Assessed	29000/30000/30000(1)
Anthracene	Residential with plant uptake		Not Assessed	2400/5400/11000(1)
	Residential without plant uptake		Not Assessed	31000(1.17 vap)/35000/37000(1&3)
	Allotment		Not Assessed	380/950/2200(1)
	Commercial		Not Assessed	520000/540000/540000(1)
	Public Open Space (Residential)		Not Assessed	74000/74000/74000(1)
	Public Open Space (Park)		Not Assessed	150000/150000/150000(1)
Benzo (a) Anthracene	Residential with plant uptake		Not Assessed	7.2/11/13(1)
	Residential without plant uptake		Not Assessed	11/14/15(1)
	Allotment		Not Assessed	2.9/6.5/13(1)
	Commercial		Not Assessed	170/170/180(1)
	Public Open Space (Residential)		Not Assessed	29/29/29(1)
	Public Open Space (Park)		Not Assessed	49/56/62(1)
Benzo (a) Pyrene	Residential with plant uptake		Not Assessed	2.2/2.7/3.0(1)
	Residential without plant uptake		Not Assessed	3.2/3.2/3.2(1)
	Allotment		Not Assessed	0.97/2.0/3.5(1)
	Commercial		Not Assessed	35/35/36(1)
	Public Open Space (Residential)		Not Assessed	5.7/5.7/5.7(1)
	Public Open Space (Park)		Not Assessed	11/12/13(1)
Benzo (b) Fluoranthene	Residential with plant uptake		Not Assessed	2.6/3.3/3.7(1)
	Residential without plant uptake		Not Assessed	3.9/4.0/4.0(1)
	Allotment		Not Assessed	0.99/2.1/3.9(1)
	Commercial		Not Assessed	44/44/45(1)
	Public Open Space (Residential)		Not Assessed	7.1/7.2/7.2(1)
	Public Open Space (Park)		Not Assessed	13/15/16(1)
Benzo (ghi) Perylene	Residential with plant uptake		Not Assessed	320/340/350(1)
	Residential without plant uptake		Not Assessed	360/360/360(1)
	Allotment		Not Assessed	290/470/640(1)
	Commercial		Not Assessed	3900/4000/4000(1)
	Public Open Space (Residential)		Not Assessed	640/640/640(1)
	Public Open Space (Park)		Not Assessed	1400/1500/1600(1)
Benzo (k) Fluoranthene	Residential with plant uptake		Not Assessed	77/93/100(1)
	Residential without plant uptake		Not Assessed	110/110/110(1)
	Allotment		Not Assessed	37/75/130(1)
	Commercial		Not Assessed	1200/1200/1200(1)
	Public Open Space (Residential)		Not Assessed	190/190/190(1)
	Public Open Space (Park)		Not Assessed	370/410/440(1)
Chrysene	Residential with plant uptake		Not Assessed	15/22/27(1)
	Residential without plant uptake		Not Assessed	30/31/32(1)
	Allotment		Not Assessed	4.1/9.4/19(1)
	Commercial		Not Assessed	350/350/350(1)
	Public Open Space (Residential)		Not Assessed	57/57/57(1)
	Public Open Space (Park)		Not Assessed	93/110/120(1)
Dibenzo (ah) Anthracene	Residential with plant uptake		Not Assessed	0.24/0.28/0.3(1)
	Residential without plant uptake		Not Assessed	0.31/0.32/0.32(1)
	Allotment		Not Assessed	0.14/0.27/0.43(1)
	Commercial		Not Assessed	3.5/3.6/3.6(1)
	Public Open Space (Residential)		Not Assessed	0.57/0.57/0.58(1)
	Public Open Space (Park)		Not Assessed	1.1/1.3/1.4(1)
Fluoranthene	Residential with plant uptake		Not Assessed	280/560/890(1)
	Residential without plant uptake		Not Assessed	1500/1600/1600(1)
	Allotment		Not Assessed	52/130/290(1)
	Commercial		Not Assessed	23000/23000/23000(1)
	Public Open Space (Residential)		Not Assessed	3100/3100/3100(1)
	Public Open Space (Park)		Not Assessed	6300/6300/6400(1)
Fluorene	Residential with plant uptake		Not Assessed	170/400/860(1)
	Residential without plant uptake		Not Assessed	2800(30.9 sol)/3800(76.5 sol)/4500(183 sol) (1&3)
	Allotment		Not Assessed	27/67/160(1)
	Commercial		Not Assessed	63000(30.9 sol)/68000/71000(1&3)
	Public Open Space (Residential)		Not Assessed	9900/9900/9900(1)
	Public Open Space (Park)		Not Assessed	20000/20000/20000(1)

List 1E cont (Poly-cyclic Aromatic Hydrocarbons mg/kg)				
Contaminant	**Generic Exposure Scenario**	**Terramech (CLEA v1.06 & S4UL methodology)**	**Environment Agency SGV (CLEA v1.04)**	**CIEH/LQM S4UL 2015 Part 4**
Indeno (cd) Pyrene	Residential with plant uptake		Not Assessed	27/36/41(1)
	Residential without plant uptake		Not Assessed	45/46/46(1)
	Allotment		Not Assessed	9.5/21/39(1)
	Commercial		Not Assessed	500/510/510(1)
	Public Open Space (Residential)		Not Assessed	82/82/82(1)
	Public Open Space (Park)		Not Assessed	150/170/180(1)
Naphthalene	Residential with plant uptake		Not Assessed	2.3/5.6/13(1)
	Residential without plant uptake		Not Assessed	2.3/5.6/13(1)
	Allotment		Not Assessed	4.1/10/24(1)
	Commercial		Not Assessed	190(76.4 sol)/460(183 sol)/1100(432 sol) (1&3)
	Public Open Space (Residential)		Not Assessed	4900/4900/4900(1)
	Public Open Space (Park)		Not Assessed	1200(76.4 sol)/1900(183 sol)/3000(1&3)
Phenanthrene	Residential with plant uptake		Not Assessed	95/220/440(1)
	Residential without plant uptake		Not Assessed	1300(36 sol)/1500/1500(1&3)
	Allotment		Not Assessed	15/38/90(1)
	Commercial		Not Assessed	22000/22000/23000(1)
	Public Open Space (Residential)		Not Assessed	3100/3100/3100(1)
	Public Open Space (Park)		Not Assessed	6200/6200/6300(1)
Pyrene	Residential with plant uptake		Not Assessed	620/1200/2000(1)
	Residential without plant uptake		Not Assessed	3700/3800/3800(1)
	Allotment		Not Assessed	110/270/620(1)
	Commercial		Not Assessed	54000/54000/54000(1)
	Public Open Space (Residential)		Not Assessed	7400/7400/7400(1)
	Public Open Space (Park)		Not Assessed	15000/15000/15000(1)
Coal Tar (Benzo (a) Pyrene as surrogate)	Residential with plant uptake		Not Assessed	0.79/0.98/1.1(1)
	Residential without plant uptake		Not Assessed	1.2/1.2/1.2(1)
	Allotment		Not Assessed	0.32/0.67/1.2(1)
	Commercial		Not Assessed	15/15/15(1)
	Public Open Space (Residential)		Not Assessed	2.2/2.2/2.2(1)
	Public Open Space (Park)		Not Assessed	4.4/4.7/4.8(1)

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List 1F (PCBs µg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency New SGV (CLEA v1.04)	CIEH/LQM 2nd Ed 2009 or CIEH/LQM S4UL 2015
Sum of PCDDs, PCDFs and dioxin-like PCBs	Residential with plant uptake		8	Not Assessed
	Residential without plant uptake		8	Not Assessed
	Allotment			Not Assessed
	Commercial		240	Not Assessed
PCB-77	Residential with plant uptake		0.0774	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.233	Not Assessed
	Commercial		2.33	Not Assessed
PCB-81	Residential with plant uptake		0.0774	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.233	Not Assessed
	Commercial		2.33	Not Assessed
PCB-126	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.247	Not Assessed
	Commercial		2.33	Not Assessed
PCB-169	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.251	Not Assessed
	Commercial		2.33	Not Assessed
PCB-105	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.247	Not Assessed
	Commercial		2.33	Not Assessed
PCB-114	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.247	Not Assessed
	Commercial		2.33	Not Assessed
PCB-118	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.247	Not Assessed
	Commercial		2.33	Not Assessed
PCB-123	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.247	Not Assessed
	Commercial		2.33	Not Assessed
PCB-156	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.251	Not Assessed
	Commercial		2.33	Not Assessed
PCB-157	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.251	Not Assessed
	Commercial		2.33	Not Assessed
PCB-156	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.251	Not Assessed
	Commercial		2.33	Not Assessed
PCB-157	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.251	Not Assessed
	Commercial		2.33	Not Assessed
PCB-167	Residential with plant uptake		0.0777	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.251	Not Assessed
	Commercial			Not Assessed
PCB-189	Residential with plant uptake		0.0778	Not Assessed
	Residential without plant uptake		0.0783	Not Assessed
	Allotment		0.252	Not Assessed
	Commercial		2.33	Not Assessed

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List 1G (ChloroAlkanes & Alkenes mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part5
1,2 Dichloroethane (1,2 -DCA)	Residential with plant uptake		Not Assessed	0.0071/0.011/0.019
	Residential without plant uptake		Not Assessed	0.0092/0.013/0.023
	Allotment		Not Assessed	0.0046/0.0083/0.016
	Commercial		Not Assessed	0.67/0.97/1.7
	Public Open Space (Residential)		Not Assessed	29/29/29
	Public Open Space (Park)		Not Assessed	21/24/28
1,1,1 Trichloroethane	Residential with plant uptake		Not Assessed	8.8/18/39
	Residential without plant uptake		Not Assessed	9.0/18/40
	Allotment		Not Assessed	48/110/240
	Commercial		Not Assessed	660/1300/3000
	Public Open Space (Residential)		Not Assessed	14000/14000/14000
	Public Open Space (Park)		Not Assessed	57000(1425^{vap})/76000(2915^{vap})/100000(6392^{vap})
1,1,2,2 Tetrachloroethanes	Residential with plant uptake		Not Assessed	1.6/3.4/7.5
	Residential without plant uptake		Not Assessed	3.9/8.0/17
	Allotment		Not Assessed	0.41/0.89/2.0
	Commercial		Not Assessed	270/550/1100
	Public Open Space (Residential)		Not Assessed	1400/1400/1400
	Public Open Space (Park)		Not Assessed	1800/2100/2300
1,1,1,2 Tetrachloroethanes	Residential with plant uptake		Not Assessed	1.2/2.8/6.4
	Residential without plant uptake		Not Assessed	1.5/3.5/8.2
	Allotment		Not Assessed	0.79/1.9/4.4
	Commercial		Not Assessed	110/250/560
	Public Open Space (Residential)		Not Assessed	1400/1400/1400
	Public Open Space (Park)		Not Assessed	1500/1800/2100
Tetrachloroethene	Residential with plant uptake		Not Assessed	0.18/0.39/0.9
	Residential without plant uptake		Not Assessed	0.18/0.4/0.92
	Allotment		Not Assessed	0.65/1.5/3.6
	Commercial		Not Assessed	19/42/95
	Public Open Space (Residential)		Not Assessed	1400/1400/1400
	Public Open Space (Park)		Not Assessed	820(424^{sol})/1100(951^{sol})/1500
Tetrachloromethane Aka Carbon Terachloride	Residential with plant uptake		Not Assessed	0.026/0.058/0.13
	Residential without plant uptake		Not Assessed	0.026/0.058/0.13
	Allotment		Not Assessed	0.45/1.0/2.4
	Commercial		Not Assessed	2.9/6.3/14
	Public Open Space (Residential)		Not Assessed	890/920/950
	Public Open Space (Park)		Not Assessed	190/270/400
Trichloroethene	Residential with plant uptake		Not Assessed	0.016/0.034/0.075
	Residential without plant uptake		Not Assessed	0.017/0.036/0.08
	Allotment		Not Assessed	0.041/0.091/0.21
	Commercial		Not Assessed	1.2/2.6/6.7
	Public Open Space (Residential)		Not Assessed	120/120/120
	Public Open Space (Park)		Not Assessed	70/91/120
Trichloromethane Aka Chloroform	Residential with plant uptake		Not Assessed	0.91/1.7/3.4
	Residential without plant uptake		Not Assessed	1.2/2.1/4.2
	Allotment		Not Assessed	0.42/0.83/1.7
	Commercial		Not Assessed	99/170/350
	Public Open Space (Residential)		Not Assessed	2500/2500/2500
	Public Open Space (Park)		Not Assessed	2600/2800/3100
Chloroethene Aka Vinyl Chloride	Residential with plant uptake		Not Assessed	0.00064/0.00087/0.0014
	Residential without plant uptake		Not Assessed	0.00077/0.0010/0.0015
	Allotment		Not Assessed	0.000550.0010/0.0018
	Commercial		Not Assessed	0.059/0.077/0.12
	Public Open Space (Residential)		Not Assessed	3.5/3.5/3.5
	Public Open Space (Park)		Not Assessed	4.8/5.0/5.4

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List 1H (Explosives mg/kg)				
Contaminant	**Generic Exposure Scenario**	**Terramech (CLEA v1.06 & S4UL methodology)**	**Environment Agency SGV (CLEA v1.04)**	**CIEH/LQM S4UL 2015 Part 6**
2,4,6 Trinitrotoluene Aka TNT	Residential with plant uptake		Not Assessed	1.6/3.7/8.1
	Residential without plant uptake		Not Assessed	65/66/66
	Allotment		Not Assessed	0.24/0.58/1.4
	Commercial		Not Assessed	1000/1000/1000
	Public Open Space (Residential)		Not Assessed	130/130/130
	Public Open Space (Park)		Not Assessed	260/270/270
RDX	Residential with plant uptake		Not Assessed	120/250/540
	Residential without plant uptake		Not Assessed	13000/13000/13000
	Allotment		Not Assessed	17/38/85
	Commercial		Not Assessed	21000/21000/21000
	Public Open Space (Residential)		Not Assessed	26000/26000/27000
	Public Open Space (Park)		Not Assessed	49000(18.7sol)/51000/53000
HMX	Residential with plant uptake		Not Assessed	5.7/13/26
	Residential without plant uptake		Not Assessed	6700/6700/6700
	Allotment		Not Assessed	0.86/1.9/3.9
	Commercial		Not Assessed	11000/11000/11000
	Public Open Space (Residential)		Not Assessed	13000/13000/13000
	Public Open Space (Park)		Not Assessed	23000(0.36^{vap})/23000(0.39^{vap})24000(0.48^{vap})

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List 1I (Pesticides mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part 7
Aldrin	Residential with plant uptake		Not Assessed	5.7/6.6/7.1(1)
	Residential without plant uptake		Not Assessed	7.3/7.4/7.5(1)
	Allotment		Not Assessed	3.2/6.1/9.6(1)
	Commercial		Not Assessed	170/170/170(1)
	Public Open Space (Residential)		Not Assessed	18/18/18(1)
	Public Open Space (Park)		Not Assessed	30/30/31(1)
Dieldrin	Residential with plant uptake		Not Assessed	0.97/2/3.5(1)
	Residential without plant uptake		Not Assessed	7/7.3/7.4(1)
	Allotment		Not Assessed	0.17/0.41/0.96(1)
	Commercial		Not Assessed	170/170/170(1)
	Public Open Space (Residential)		Not Assessed	18/18/18(1)
	Public Open Space (Park)		Not Assessed	30/30/30(1)
Atrazine	Residential with plant uptake		Not Assessed	3.3/7.6/17.4(1)
	Residential without plant uptake		Not Assessed	610/620/620(1)
	Allotment		Not Assessed	0.5/1.2/2.7(1)
	Commercial		Not Assessed	9300/9300/9400(1)
	Public Open Space (Residential)		Not Assessed	1200/1200/1200(1)
	Public Open Space (Park)		Not Assessed	2300/2400/2400(1)
Dichlorvos	Residential with plant uptake		Not Assessed	0.032/0.066/0.14(1)
	Residential without plant uptake		Not Assessed	6.4/6.5/6.6(1)
	Allotment		Not Assessed	0.0049/0.010/0.022(1)
	Commercial		Not Assessed	140/140/140(1)
	Public Open Space (Residential)		Not Assessed	16/16/16(1)
	Public Open Space (Park)		Not Assessed	26/26/27(1)
Alpha Endosulfan	Residential with plant uptake		Not Assessed	7.4/18/41(1)
	Residential without plant uptake		Not Assessed	160(0.003^{vap})/280(0.007^{vap})/410(0.016^{vap})(1 & 3)
	Allotment		Not Assessed	1.2/2.9/6.6(1)
	Commercial		Not Assessed	5600(0.016^{vap})/7400(0.016^{vap})/8400(0.016^{vap}) (1 & 3)
	Public Open Space (Residential)		Not Assessed	1200/1200/1200(1)
	Public Open Space (Park)		Not Assessed	2400/2400/2500(1)
Beta Endosulfan	Residential with plant uptake		Not Assessed	7.0/17/39(1)
	Residential without plant uptake		Not Assessed	150(0.00007^{vap})/320(0.0002^{vap})/440(0.0004^{vap}) (1 & 3)
	Allotment		Not Assessed	1.1/2.7/6.4(1)
	Commercial		Not Assessed	6300(0.00007^{vap})/7800(0.0002^{vap})/8700(0.0004^{vap}) (1 & 3)
	Public Open Space (Residential)		Not Assessed	1200/1200/1200(1)
	Public Open Space (Park)		Not Assessed	2400/2400/2500(1)
Alpha BHC (Hexachlorocyclohexane) Inc Lindane	Residential with plant uptake		Not Assessed	0.23/0.66/1.2(1)
	Residential without plant uptake		Not Assessed	6.9/9.2/11(1)
	Allotment		Not Assessed	0.035/0.087/0.21(1)
	Commercial		Not Assessed	170/180/180(1)
	Public Open Space (Residential)		Not Assessed	24/24/24(1)
	Public Open Space (Park)		Not Assessed	47/48/48(1)
Beta BHC (Hexachlorocyclohexane) Inc Lindane	Residential with plant uptake		Not Assessed	0.085/0.2/0.46(1)
	Residential without plant uptake		Not Assessed	3.7/3.8/3.8(1)
	Allotment		Not Assessed	0.013/0.032/0.077(1)
	Commercial		Not Assessed	65/65/65(1)
	Public Open Space (Residential)		Not Assessed	8.1/8.1/8.1(1)
	Public Open Space (Park)		Not Assessed	15/15/16(1)
Gamma BHC (Hexachlorocyclohexane) Inc Lindane	Residential with plant uptake		Not Assessed	0.06/0.14/0.33(1)
	Residential without plant uptake		Not Assessed	2.9/3.3/3.5(1)
	Allotment		Not Assessed	0.0092/0.023/0.054(1)
	Commercial		Not Assessed	67/69/70(1)
	Public Open Space (Residential)		Not Assessed	8.2/8.2/8.2(1)
	Public Open Space (Park)		Not Assessed	14/15/15(1)

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List 1J (Chlorobenzenes mg/kg)				
Contaminant	**Generic Exposure Scenario**	**Terramech (CLEA v1.06 & S4UL methodology)**	**Environment Agency SGV (CLEA v1.04)**	**CIEH/LQM S4UL 2015 Part8**
Chlorobenzene	Residential with plant uptake		Not Assessed	0.46/1.0/2.4
	Residential without plant uptake		Not Assessed	0.46/1.0/2.4
	Allotment		Not Assessed	5.9/14/32
	Commercial		Not Assessed	56/130/290
	Public Open Space (Residential)		Not Assessed	11000/13000/14000
	Public Open Space (Park)		Not Assessed	1300(675^{sol})/2000(1520^{sol})/2900
1,2 Dichlorobenzene	Residential with plant uptake		Not Assessed	23/56/130
	Residential without plant uptake		Not Assessed	24/57/130
	Allotment		Not Assessed	94/230/540
	Commercial		Not Assessed	2000(571^{sol})/4800(1370^{sol})/11000(3240^{sol})
	Public Open Space (Residential)		Not Assessed	90000/95000/98000
	Public Open Space (Park)		Not Assessed	24000(571^{sol})/36000(1370^{sol})/51000(3240^{sol})
1,3 Dichlorobenzene	Residential with plant uptake		Not Assessed	0.4/0.1/2.3
	Residential without plant uptake		Not Assessed	0.44/1.1/2.5
	Allotment		Not Assessed	0.25/0.6/1.5
	Commercial		Not Assessed	30/73/170
	Public Open Space (Residential)		Not Assessed	300/300/300
	Public Open Space (Park)		Not Assessed	390/440/470
1,4 Dichlorobenzene	Residential with plant uptake		Not Assessed	61/150/350
	Residential without plant uptake		Not Assessed	61/150/350
	Allotment		Not Assessed	19/37/88
	Commercial		Not Assessed	4400(224^{vap})/10000(540^{vap})/25000(1280^{vap})
	Public Open Space (Residential)		Not Assessed	17000/17000/17000
	Public Open Space (Park)		Not Assessed	36000(224^{vap})/36000(540^{vap})36000(1280^{vap})
1,2,3 Trichlorobenzene	Residential with plant uptake		Not Assessed	1.5/3.6/8.6
	Residential without plant uptake		Not Assessed	1.5/3.7/8.8
	Allotment		Not Assessed	4.7/12/28
	Commercial		Not Assessed	102/250/590
	Public Open Space (Residential)		Not Assessed	1800/1800/1800
	Public Open Space (Park)		Not Assessed	770(134^{vap})/1100(330^{vap})/1600(789^{vap})
1,2,4 Trichlorobenzene	Residential with plant uptake		Not Assessed	2.6/6.4/15
	Residential without plant uptake		Not Assessed	2.6/6.4/15
	Allotment		Not Assessed	55/140/320
	Commercial		Not Assessed	220/530/1300
	Public Open Space (Residential)		Not Assessed	15000/17000/19000
	Public Open Space (Park)		Not Assessed	1700(318^{vap})/2600(786^{vap})/4000(1880^{vap})
1,3,5 Trichlorobenzene	Residential with plant uptake		Not Assessed	0.33/0.81/1.9
	Residential without plant uptake		Not Assessed	0.33/0.81/1.9
	Allotment		Not Assessed	4.7/12/28
	Commercial		Not Assessed	23/55/130
	Public Open Space (Residential)		Not Assessed	1700/1700/1800
	Public Open Space (Park)		Not Assessed	380(36.7^{vap})/580(90.8^{vap})/860(217^{vap})
1,2,3,4 Tetrachlorobenzenes	Residential with plant uptake		Not Assessed	15/36/78
	Residential without plant uptake		Not Assessed	24/56/120
	Allotment		Not Assessed	4.4/11/26
	Commercial		Not Assessed	1700(122^{vap})/3080(304^{vap})/4400(728^{vap})
	Public Open Space (Residential)		Not Assessed	830/830/830
	Public Open Space (Park)		Not Assessed	1500(122^{vap})/1600/1600
1,2,3,5 Tetrachlorobenzenes	Residential with plant uptake		Not Assessed	0.66/1.6/3.7
	Residential without plant uptake		Not Assessed	0.75/1.9/4.3
	Allotment		Not Assessed	0.38/0.9/2.2
	Commercial		Not Assessed	49(39.4^{vap})/120(98.1^{vap})/240235^{vap})
	Public Open Space (Residential)		Not Assessed	78/79/79
	Public Open Space (Park)		Not Assessed	110(39^{vap})120/130
1,2,4,5 Tetrachlorobenzenes	Residential with plant uptake		Not Assessed	0.33/0.77/1.6
	Residential without plant uptake		Not Assessed	0.73/1.7/3.5
	Allotment		Not Assessed	0.06/0.16/0.37
	Commercial		Not Assessed	42(19.7^{sol})/72(49.1^{sol})/96
	Public Open Space (Residential)		Not Assessed	13/13/13
	Public Open Space (Park)		Not Assessed	25/26/26
Pentachlorobenzene	Residential with plant uptake		Not Assessed	5.8/12/22
	Residential without plant uptake		Not Assessed	19/30/38
	Allotment		Not Assessed	1.2/3.1/7.0
	Commercial		Not Assessed	640(43.0^{sol})/770(107^{sol})/830
	Public Open Space (Residential)		Not Assessed	100/100/100
	Public Open Space (Park)		Not Assessed	190/190/190

List 1J (Chlorobenzenes mg/kg) cont

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part8
Hexachlorobenzene	Residential with plant uptake		Not Assessed	1.3(0.2^{vap})/3.3(0.5^{vap})/4.9
	Residential without plant uptake		Not Assessed	4.1(0.2^{vap})/5.7(0.5^{vap})/6.7(1.2^{vap})
	Allotment		Not Assessed	0.47/1.1/2.5
	Commercial		Not Assessed	110(0.2^{vap})120/120
	Public Open Space (Residential)		Not Assessed	16/16/16
	Public Open Space (Park)		Not Assessed	30/30/30

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List 1K (Phenols & Chlorophenols mg/kg)

Contaminant	Generic Exposure Scenario	Terramech (CLEA v1.06 & S4UL methodology)	Environment Agency SGV (CLEA v1.04)	CIEH/LQM S4UL 2015 Part9
Phenol	Residential with plant uptake		Not Assessed	280/550/1100
	Residential without plant uptake		Not Assessed	750/1300/2300
	Allotment		Not Assessed	66/140/280
	Commercial		Not Assessed	760/1500/3200
	Public Open Space (Residential)		Not Assessed	760/1500/3200
	Public Open Space (Park)		Not Assessed	760/1500/3200
Chlorophenol	Residential with plant uptake		Not Assessed	0.87/2.0/4.5
	Residential without plant uptake		Not Assessed	94/150/210
	Allotment		Not Assessed	0.13/0.30/0.7
	Commercial		Not Assessed	3500/4000/4300
	Public Open Space (Residential)		Not Assessed	620/620/620
	Public Open Space (Park)		Not Assessed	1100/1100/1100
Pentachlorophenol	Residential with plant uptake		Not Assessed	0.22/0.52/1.2
	Residential without plant uptake		Not Assessed	27(16.4^{vap})/29/31
	Allotment		Not Assessed	0.03/0.08/0.19
	Commercial		Not Assessed	400/400/400
	Public Open Space (Residential)		Not Assessed	60/60/60
	Public Open Space (Park)		Not Assessed	110/120/120

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(1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6%
(2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8
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List 1L (Other mg/kg)				
Contaminant	**Generic Exposure Scenario**	**Terramech (CLEA v1.06 & S4UL methodology)**	**Environment Agency SGV (CLEA v1.04)**	**CIEH/LQM S4UL 2015 Part 10**
Carbon Disulphide	Residential with plant uptake		Not Assessed	0.14/0.29/0.62
	Residential without plant uptake		Not Assessed	0.14/0.29/0.62
	Allotment		Not Assessed	4.8/10/23
	Commercial		Not Assessed	11/22/47
	Public Open Space (Residential)		Not Assessed	11000/11000/12000
	Public Open Space (Park)		Not Assessed	1300/1900/2700
Hexachlorobutadiene	Residential with plant uptake		Not Assessed	0.29/0.7/1.6
	Residential without plant uptake		Not Assessed	0.32/0.78/1.8
	Allotment		Not Assessed	0.25/0.61/1.4
	Commercial		Not Assessed	31/66/120
	Public Open Space (Residential)		Not Assessed	25/25/25
	Public Open Space (Park)		Not Assessed	48/50/51

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LQM - Land Quality Management (commercial research)
(1) xx/yy/zz SOM - Soil Organic Matter dependant at 1%/2.5%/6%
(2) xx/yy/zz pH - pH dependant at pH6/pH7/pH8
(3) Internal limits exceeded during calculations. Vapour or solubility saturation limit exceeded (limit presented in brackets)
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List 2 (Waste Acceptance Criteria (WAC) Analysis)			
	Inert Waste Landfill	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Solid Waste Analysis - Limit values for compliance			
Total Organic Carbon (%)	3	5	6
Loss on Ignition (%)	-	-	10
Sum of BTEX (mg/kg)	6	-	-
Sum of 7 PCBs (mg/kg)	1	-	-
Mineral Oil (mg/kg)	500	-	-
PAH Sum of 17 (mg/kg)	100	-	-
pH (pH Units)	-	>6	-
Eluate Analysis - Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)			
Arsenic	0.5	2	25
Barium	20	100	300
Cadmium	0.04	1	5
Chromium	0.5	10	70
Copper	2	50	100
Mercury	0.01	0.2	2
Molybdenum	0.5	10	30
Nickel	0.4	10	40
Lead	0.5	10	50
Antimony	0.06	0.7	5
Selenium	0.1	0.5	7
Zinc	4	50	200
Chloride	800	15000	25000
Fluoride	10	150	500
Sulphate as SO_4	1000	20000	50000
Total Dissolved Solids	4000	60000	100000
Phenol Index	1	-	-
Dissolved Organic Carbon	500	800	1000

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List 3 (Generic Soil Screening Values for the Selection of Appropriate Water Supply Pipe Materials)		
Contaminant **(mg/kg dry weight soil)**	Threshold levels Water Supply Pipes (mg/kg dried soil)	Guidance reference
(Corrosion)		WRAS, Water Regulations Advisory Scheme Contaminated Ground Guidance Note 9-04-03
Sulphate	2000	
Sulphur	5000	
Sulphide	250	
pH		
(Toxicity)		
Antimony	10	
Arsenic	10*	
Cadmium	3	
Chromium (Hexavalent)	25	
Chromium (total)	600	
Cyanide (free)	25*	
Cyanide (complexes)	250*	
Lead	500	
Mercury	1	
Selenium	3	
Thiocyanate	50	
(Organics)		
Coal Tar	50	
Cyclohexane extractable	50	
Phenol	5	
Poly Aromatic Hydrocarbons	50	
Toluene extractable	50	
Petroleum Hydrocarbons	50	

*Note 1 * It is not recommended that water pipes should be laid in sites where these substances are identified or suspected.*

Type Of Contaminant	**SuitableWater Supply Pipe Material**
None	No special requirements
Flammable	Metallic – in the absence of corrosive contaminants, Wrapped iron – if corrosive and flammable contaminants are present.
Toxic	Metallic or plastic – but see Note 1
Organic	Metallic (iron, copper) or composite Polyethylene/Aluminium/ Polyethylene pipe
Corrosive	Plastic pipe, plastic coated copper or wrapped iron
Organic and Corrosive	Wrapped iron or composite Polyethylene/Aluminium/ Polyethylene pipe

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List 3 (Generic Soil Screening Values for the Selection of Appropriate Water Supply Pipe Materials - Thames Water Utilities Ltd)	
Aliphatic C5 - C12	0.5 mg/kg
Aromatic C5 - C12	0.5 mg/kg
Aliphatic C12 - C21 (not chlorinated)	10 mg/kg
Aromatic C12 - C21 (not BTEX)	10 mg/kg
Aliphatic C21 - C35	500 mg/kg
Aromatic C21 - C35	500 mg/kg
Chlorinated short chain aliphatic hydrocarbons	0.5 mg/kg
Chlorinated short chain aromatic hydrocarbons	2 mg/kg
BTEX compounds	0.1 mg/kg
MTBE compounds	0.1 mg/kg
Naphthalene	5 mg/kg
Phenols (unless present with BTEX)	5 mg/kg
Phenols (in conjunction with BTEX)	2 mg/kg
Phenols (chlorinated)	2 mg/kg

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List 4 (Tier 1 Generic Soil Target Concentrations for Groundwater Protection - EA R&D 20 method)	
Contaminant	**Remedial Target (Mg/kg)**
Arsenic	5.0 (Natural soils 0 to 35) (3)
Cadmium	1.13
Chromium VI	10
Copper	255
Lead	590
Mercury (inorganic)	0.5
Nickel	10 (Average rural soils 21.1mg/kg) (2)
Selenium	0.5
Zinc	105
Poly Cyclic Aromatics (Total Aromatics C_5 to C_{44})	4.5×10^{-5} (1)
Total Petroleum Hydrocarbons (Aliphatic and Aromatic C_5 to C_{44})	5.8×10^{-3} (1)
(1) organic carbon content sensitive, actual values should be used if possible	
(2) Nickel in Rural soils 1.16 to 216mg/kg average 21.1 mg/kg (ref - EA SC050021 / Nickel SGV)	
(3) Arsenic in Natural Soils 0 to 35mg/kg (ref - BGS Soils Beneath Our Feet website)	

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List 4 (Selected Generic Groundwater Screening Values mg/litre)						
Contaminant Mg/litre	**EQS Freshwater**	**EQS Saltwater**	**WHO (health)**	**WHO (ATO)**	**EU Drinking water**	**UK Drinking water**
Antimony	-	-	0.005	-	0.005	0.005
Arsenic	0.05	0.025	0.01	-	0.01	0.01
Boron	0.002	0.007	0.0003	-	0.001	0.001
Cadmium	0.005	0.0025	0.003	-	0.005	0.005
Chromium	0.005-0.025	0.015	0.05	-	0.05	0.05
Copper	0.001-0.028	0.005	2	1	2	2
Lead	0.004-0.025	0.025	0.01	-	0.01	0.01
Mercury	0.001	0.0003	0.001	-	0.001	0.001
Molybdenum	-	-	0.07	-	-	-
Nickel	0.05-0.2	0.03	0.02	-	0.02	0.02
Selenium	-	-	0.01	-	0.01	0.01
Vanadium	0.02-0.06	0.1	-	-	-	-
Zinc	0.008-0.5	-	-	3	-	5
Hydrocarbons (dissolved/emulsion)	-	-	-	-	-	0.01
Poly-cyclic Aromatic Hydrocarbons	-	-	-	-	0.0001	0.0001
Benzene	0.3	0.3	0.01	-	0.001	0.001
Toluene	0.5	0.5	0.7	24-170	-	-
Ethylbenzene	-	-	0.3	-	-	-
Xylene	0.03	0.03	0.5	20-1800	-	-
Benzo (a) Pyrene	-	-	0.0007	-	0.00001	0.00001
Phenol	0.03	0.03	-	-	0.0005	0.0005

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Date 28th October 2016

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plot 6.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plot 6 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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> *condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.*

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plot 6 of the development only as shown in Figure 2.

Similar reports have previously been prepared for Plots 1-5, 44-57, 82-99 & 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 25th October 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plot 6.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 6	500mm	200mm	**700mm**

Completion Statement - Plot 6

This letter report is solely in reference to Plot 6 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plot 6 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plot 6 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plot 6.

No comment is made on the condition of the remainder of the site.

Yours Sincerely,
For **WYG ENVIRONMENT**

Sarah Roberts
Senior Geo-Environmental Engineer

Ian Viney
Associate Director

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Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

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CF24 0AD

TEL: +44 (0)29 2032 0769
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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Plot 6	1

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Project	Plate Title	
Mill Street, Eastleigh	BLANK	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 2

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plot 85, 86, 92, 93, 94\A069641-5 LetRpt Plots 85, 86, 92, 93, 94.doc

Date 28th April 2016

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 85, 86, 92, 93 & 94.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 85, 86, 92, 93 & 94 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 85, 86, 92, 93 & 94 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 95 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 28th April 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 85, 86, 92, 93 & 94.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 85	350mm	350mm	**700mm**
Plot 86	350mm	300mm	**650mm**
Plot 92	350mm	250mm	**600mm**
Plot 93	300mm	350mm	**650mm**
Plot 94	300mm	300mm	**600mm**

Completion Statement - Plots 85, 86, 92, 93 & 94

This letter report is solely in reference to Plots 85, 86, 92, 93 & 94 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 85, 86, 92, 93 & 94 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 85, 86, 92, 93 & 94 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 85, 86, 92, 93 & 94.

No comment is made on the condition of the remainder of the site.

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Yours Sincerely,
For **WYG ENVIRONMENT**





Sarah Roberts
Senior Geo-Environmental Engineer

Luzia Kathriner
Geo-Environmental Engineer

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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SITE

EASTLEIGH

Chandler's Ford

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Stoke Common

Stoke Park Wood

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Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
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Plots 85, 86, 92, 93, & 94

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Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Cap Validation Excavation - Plot 85	1



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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Cap Validation Excavation - Plot 86	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 2



Plate Title	Plate No
Cap Validation Excavation - Plot 92	3



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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Cap Validation Excavation - Plot 93	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 4



Plate Title	Plate No
Cap Validation Excavation - Plot 94	5

BLANK

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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	BLANK	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 6

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plot 95, 96, 97\A069641-5 LetRpt Plots 95, 96, 97.doc

Date 17th March 2016

Kate Gardener
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Kate,

Capping System Validation – Mill Street, Eastleigh Plots 95, 96 and 97.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 95, 96 and 97 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 95, 96 and 97 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 17th March 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 95, 96 and 97.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 95	200mm	400mm	**600mm**
Plot 96	200mm	400mm	**600mm**
Plot 97	300mm	350mm	**600mm**

Completion Statement - Plots 95, 96 and 97

This letter report is solely in reference to Plots 95, 96 and 97 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 95, 96 and 97 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 95, 96 and 97 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 95, 96 and 97. No comment is made on the condition of the remainder of the site.

Yours Sincerely,

For **WYG ENVIRONMENT**

Sarah Roberts
Senior Geo-Environmental Engineer

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Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

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CF24 0AD

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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
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Plots 95, 96, 97

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Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey		Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ



Plate Title	Plate No
Cap Validation Excavation - Plot 95	1



WYG Environment
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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Cap Validation Excavation - Plot 96	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 2



Plate Title	Plate No
Cap Validation Excavation - Plot 97	3

BLANK

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Blank	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 4

CHEMICAL LABORATORY DATA

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WYG Environment Planning Transport Ltd Registered in England Number: 3050297
Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plot 98 & 99\A069641-5 LetRpt Plots 98 and 99.doc

Date 6th April 2016

Kate Gardener
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Kate,

Capping System Validation – Mill Street, Eastleigh Plot 98 and 99.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 98 and 99 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 98 and 99 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 95, 96, 97 & 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 5th April 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 98 and 99.

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 98	450mm	200mm	**650mm**
Plot 99	300mm	300mm	**600mm**

Completion Statement - Plots 98 and 99

This letter report is solely in reference to Plots 98 and 99 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 98 and 99 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 98 and 99 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 98 and 99. No comment is made on the condition of the remainder of the site.

Yours Sincerely,
For **WYG ENVIRONMENT**





Sarah Roberts
Senior Geo-Environmental Engineer

Luzia Kathriner
Geo-Environmental Engineer

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Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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FIGURES

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

N

SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

Bishopstoke

North Stoneham

Itchen Valley Country Park

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CF24 0AD

TEL: +44 (0)29 2032 0769
FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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5th Floor, Longcross Court, 47 Newport Road, Cardiff
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Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: LK	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Cap Validation Excavation - Plot 98	1



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title
Mill Street, Eastleigh	Cap Validation Excavation - Plot 99

Client	Checked by	Plate No.
Taylor Wimpey	LK	2

CHEMICAL LABORATORY DATA

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Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plot 107 & 108\A069641-5 LetRpt Plots 107-108.doc

Date 16th December 2015

Kate Gardener
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Kate,

Capping System Validation – Mill Street, Eastleigh Plot 107 to 108.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 107 and 108 inclusive with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 107 to 108 inclusive of the development only as shown in Figure 2.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 16th December 2015. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 107 and 108.

The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil**

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materials were shown to meet the import criteria for the designated end use. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 107	250mm	350mm	**600mm**
Plot 108	300mm	300mm	**600mm**

Completion Statement - Plots 107 to 108 inclusive

This letter report is solely in reference to Plots 107 to 108 inclusive of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 107 to 108 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 107 to 108 inclusive has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 107 to 108 inclusive. No comment is made on the condition of the remainder of the site.

Yours Sincerely,

For **WYG ENVIRONMENT**



Senior Sarah Roberts
Geo-Environmental Engineer

Enc.

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Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

N

SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

Bishopstoke

North Stoneham

Itchen Valley Country Park

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47 NEWPORT ROAD
CARDIFF
CF24 0AD

TEL: +44 (0)29 2032 0769
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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Plot 107	1



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 108	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 2

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plot 109, 111 & 112\A069641-5 LetRpt Plots 109,111,112.doc

Date 21st January 2016

Kate Gardener
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Kate,

Capping System Validation – Mill Street, Eastleigh Plot 109, 111 and 112.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 109, 111 and 112 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
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In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 109, 111 and 112 of the development only as shown in Figure 2.

A similar report has previously been prepared for plots 107 and 108 dated 16th December 2015.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 21st January 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 109, 111 and 112.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 109	450mm	150mm	**600mm**
Plot 111	300mm	350mm	**650mm**
Plot 112	170mm	500mm	**670mm**

Completion Statement - Plots 109, 111 and 112

This letter report is solely in reference to Plots 109, 111 and 112 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 109, 111 and 112 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 109, 111 and 112 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 109, 111 and 112. No comment is made on the condition of the remainder of the site.

Yours Sincerely,

For **WYG ENVIRONMENT**

Sarah Roberts
Senior Geo-Environmental Engineer

5th Floor, Longcross Court, 47 Newport Road, Cardiff CF24 0AD
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Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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North Stoneham

Itchen Valley Country Park

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REV	DESCRIPTION	BY	CHK	APP	DATE

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47 NEWPORT ROAD
CARDIFF
CF24 0AD

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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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N



Plots 109 and 111 to 112

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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WYG Environment Planning Transport Ltd Registered in England Number: 3050297
Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ



Plate Title	Plate No
Cap Validation Excavation - Plot 109	1



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title
Mill Street, Eastleigh	Cap Validation Excavation - Plot 111
Client: Taylor Wimpey	Checked by: SR / Plate No.: 2



Plate Title	Plate No
Cap Validation Excavation - Plot 112	3

BLANK

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Blank	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 4

Ref: N:\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plot 110 & 113\A069641-5 LetRpt Plots 110 and 113.doc

Date 11th February 2016

Kate Gardener
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Kate,

Capping System Validation – Mill Street, Eastleigh Plot 110 and 113.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 110 and 113 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 110 and 113 of the development only as shown in Figure 2.

A similar report has previously been prepared for plots 107 and 108 dated 16th December 2015 and for plots 109, 111 and 112 dated 21st January 2016.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 21st January 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 110 and 113.

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 110	300mm	300mm	**600mm**
Plot 113	400mm	200mm	**600mm**

Completion Statement - Plots 110 and 113

This letter report is solely in reference to Plots 110 and 113 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 110 and 113 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 110 and 113 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 110 and 113. No comment is made on the condition of the remainder of the site.

Yours Sincerely,
For **WYG ENVIRONMENT**

Sarah Roberts
Senior Geo-Environmental Engineer

Luzia Kathriner
Geo-Environmental Engineer

5th Floor, Longcross Court, 47 Newport Road, Cardiff CF24 0AD
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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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FIGURES

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

N

SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

Bishopstoke

North Stoneham

Itchen Valley Country Park

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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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Plots 110 and 113

WYG Environment 5th Floor, Longcross Court, 47 Newport Road, Cardiff Tel: 02920 829200 Fax: 02920 455321 Environmental Consultancy Ground Engineering Services	Project: Mill Street, Eastleigh	Drawing Title: Site Layout Plan	
	Client: Taylor Wimpey PLC	Checked by: LK	Drawing No.: Figure 2

PHOTOGRAPHS

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WYG Environment Planning Transport Ltd Registered in England Number: 3050297
Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ



Plate Title	Plate No
Cap Validation Excavation - Plot 110	1



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title
Mill Street, Eastleigh	Cap Validation Excavation - Plot 113
Client: Taylor Wimpey	Checked by: LK / Plate No.: 2

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 7, 8, 9\A069641-5 LetRpt Plots 7-9.doc

Date 15th November 2016

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 7, 8 & 9.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 7, 8 & 9 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

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> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
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4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 7, 8 & 9 of the development only as shown in Figure 2.

Similar reports have previously been prepared for Plots 1-6, 44-57, 82-99 & 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 9th November 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 7, 8 & 9.

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Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 7	450mm	300mm	**750mm**
Plot 8	300mm	350mm	**650mm**
Plot 9	350mm	250mm	**600mm**

Completion Statement - Plots 7, 8 & 9

This letter report is solely in reference to Plots 7, 8 & 9 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 7, 8 & 9 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 7, 8 & 9 has been assessed through the inspection of trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 7, 8 & 9.

No comment is made on the condition of the remainder of the site.

Yours Sincerely,
For **WYG ENVIRONMENT**

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Sarah Roberts
Senior Geo-Environmental Engineer

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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SITE

EASTLEIGH

Chandler's Ford

Allbrook

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Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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WYG Environment
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Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ



Plate Title	Plate No
Plot 7	1



WYG Environment 5th Floor, Longcross Court, 47 Newport Road, Cardiff Tel: 02920 829200 Fax: 02920 455321 Environmental Consultancy Ground Engineering Services	Project Mill Street, Eastleigh	Plate Title Plot 8	
	Client Taylor Wimpey	Checked by SR	Plate No. 2



Plate Title	Plate No
Plot 9	3

BLANK

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	BLANK	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 4

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 10-15\A069641-5 LetRpt Plots 10-15.doc

Date 29th November 2016

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 10 to 15.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 10 - 15 with respect to ground contamination.

Background

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1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 10 - 15 of the development only as shown in Figure 2.

Similar reports have previously been prepared for Plots 1-9, 44-57, 82-99 & 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

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The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 9th November 2016. Photographic records of the site visits appended to this report document the validation process.

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Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 10	350mm	250mm	**600mm**
Plot 11	300mm	300mm	**600mm**
Plot 12	300mm	300mm	**600mm**
Plot 13	350mm	250mm	**600mm**
Plot 14	300mm	300mm	**600mm**
Plot 15	300mm	300mm	**600mm**

Completion Statement - Plots 10 -15

This letter report is solely in reference to Plots 10 - 15 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 10 - 15 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 10 – 15 has been assessed through the inspection of trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 10 - 15.

No comment is made on the condition of the remainder of the site.

Yours Sincerely,

For **WYG ENVIRONMENT**

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

Sarah Roberts
Senior Geo-Environmental Engineer

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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FIGURES

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N

SITE

EASTLEIGH

Allbrook

Chandler's Ford

Boyatt Wood

Stoke Common

Stoke Park Wood

Bishopstoke

North Stoneham

Southampton International Airport

Itchen Valley Country Park

Bassett Green

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CF24 0AD

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Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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	Client: Taylor Wimpey PLC	Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Plot 10	1



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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 11	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 2



Plate Title	Plate No
Plot 12	3



WYG Environment 5th Floor, Longcross Court, 47 Newport Road, Cardiff Tel: 02920 829200 Fax: 02920 455321 Environmental Consultancy Ground Engineering Services	Project Mill Street, Eastleigh	Plate Title Plot 13	
	Client Taylor Wimpey	Checked by SR	Plate No. 4



Plate Title	Plate No
Plot 14	5



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5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 15	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 6

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 16-20\A069641-5 LetRpt Plots 16 to 20.doc

Date 20th April 2017

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 16-20.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 16 to 20 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 16 to 20 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 1 to 5 inclusive, 85 to 99 inclusive and 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 6th October 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 16 to 20.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 16	300mm	300mm	**600mm**
Plot 17	330mm	280mm	**610mm**
Plot 18	325mm	275mm	**600mm**
Plot 19	300mm	300mm	**600mm**
Plot 20	300mm	300mm	**600mm**

* Minimum thickness - base of cap not reached

Completion Statement - Plots 16 to 20

This letter report is solely in reference to Plots 16 to 20 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 16 to 20 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 16 to 20 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 16 to 20.

No comment is made on the condition of the remainder of the site.

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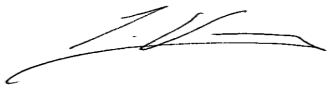
Yours Sincerely,
For **WYG ENVIRONMENT**





Simon Johnson
Associate

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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SITE

EASTLEIGH

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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641	5 8116	GEO	1	00

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	Client: Taylor Wimpey PLC	Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Plot 16	1



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Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 17	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 2



Plate Title	Plate No
Plot 18	3



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	Client Taylor Wimpey	Checked by SR	Plate No. 4



Plate Title	Plate No
Plot 20	5

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh		
Client: Taylor Wimpey	Checked by: SR	Plate No.: 6

CHEMICAL LABORATORY DATA

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Ref: Z:\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 21-25 and 6\A069641-5 LetRpt Plots 21-25 and 6.doc

Date 4th July 2017

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 21-25 and 6.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 21 to 25 and Plot 6 with respect to ground contamination. Plot 6 was initially inspected in October 2016; however, due to recent disturbance to the ground the plot was re-inspected to ensure the capping system had not been unduly compromised.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought*

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 21 to 25 and Plot 6 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 1 to 20 inclusive, 44 to 57 inclusive, 82 to 99 inclusive and 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 9th June 2017. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 21 to 25 and Plot 6.

The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 6	400mm	400mm	**800mm**
Plot 21	350mm	400mm	**750mm**
Plot 22	300mm	300mm	**600mm**
Plot 23	250mm	350mm	**615mm**
Plot 24	215mm	400mm	**615mm**
Plot 25	305mm	300mm	**605mm**

* Minimum thickness - base of cap not reached

Completion Statement - Plots 21 to 25 and Plot 6

This letter report is solely in reference to Plots 21 to 25 and Plot 6 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 21 to 25 and Plot 6 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 21 to 25 and Plot 6 has been assessed through the inspection of six trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 21 to 25 and Plot 6.

No comment is made on the condition of the remainder of the site.

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

Yours Sincerely,
For **WYG ENVIRONMENT**





Simon Johnson
Associate

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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SITE

EASTLEIGH

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CF24 0AD

TEL: +44 (0)29 2032 0769
FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641 5	8116	GEO	1	00

WYG Group Ltd.

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	Client: Taylor Wimpey PLC	Checked by: SJ	Drawing No.: Figure 2

PHOTOGRAPHS

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ



Plate Title	Plate No
Plot 21	1



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 2	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 2



Plate Title	Plate No
Plot 23	3



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 24	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 4



Plate Title	Plate No
Plot 25	5



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 6	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 6

Ref: Z:\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 26 to 34\A069641-5 LetRpt Plots 26 to 34.doc

Date 21st July 2017

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 26 to 34.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 26 to 34 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 26 to 34 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 1 to 25 inclusive, 44 to 57 inclusive, 82 to 99 inclusive and 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 19th July 2017. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 26 to 34.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 26	550	200	**750**
Plot 27	550	200	**750**
Plot 28	450	200	**650**
Plot 29	350	250	**600**
Plot 30	300	300	**600**
Plot 31	400	300	**700**
Plot 32	350	300	**650**
Plot 33	400	300	**700**
Plot 34	300	300	**600**

* Minimum thickness - base of cap not reached

Completion Statement - Plots 26 to 34

This letter report is solely in reference to Plots 26 to 34 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 26 to 34 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 26 to 34 has been assessed through the inspection of nine trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 26 to 34.

No comment is made on the condition of the remainder of the site.

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WYG Environment Planning Transport Ltd Registered in England Number: 3050297
Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

Yours Sincerely,
For **WYG ENVIRONMENT**





Simon Johnson
Associate

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

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SITE

EASTLEIGH

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REV	DESCRIPTION	BY	CHK	APP	DATE

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47 NEWPORT ROAD
CARDIFF
CF24 0AD

TEL: +44 (0)29 2032 0769
FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641	5 8116	GEO	1	00

WYG Group Ltd.

N



WYG Environment
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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SJ	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Plot 26	1



WYG Environment
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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 27	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 2



Plate Title	Plate No
Plot 28	3



WYG Environment 5th Floor, Longcross Court, 47 Newport Road, Cardiff Tel: 02920 829200 Fax: 02920 455321 Environmental Consultancy Ground Engineering Services	Project Mill Street, Eastleigh	Plate Title Plot 29	
	Client Taylor Wimpey	Checked by SJ	Plate No. 4



Plate Title	Plate No
Plot 30	5



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5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 31	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 6



Plate Title	Plate No
Plot 32	7



WYG Environment 5th Floor, Longcross Court, 47 Newport Road, Cardiff Tel: 02920 829200 Fax: 02920 455321 Environmental Consultancy Ground Engineering Services	Project Mill Street, Eastleigh	Plate Title Plot 33	
	Client Taylor Wimpey	Checked by SJ	Plate No. 8



Plate Title	Plate No
Plot 34	9

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5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh		
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 10

Ref: Z:\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 35 to 38\A069641-5 LetRpt Plots 35 to 38.doc

Date 30th August 2017

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 35 to 38.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 35 to 38 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 35 to 38 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 1 to 34 inclusive, 44 to 57 inclusive, 82 to 99 inclusive and 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 18th August 2017. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 35 to 38.

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 35	650	0	**650**
Plot 36	650	0	**650**
Plot 37	400	200	**600**
Plot 38	400	200	**600**

* Minimum thickness - base of cap not reached

Completion Statement - Plots 35 to 38

This letter report is solely in reference to Plots 35 to 38 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 35 to 38 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 35 to 38 has been assessed through the inspection of nine trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 35 to 38.

No comment is made on the condition of the remainder of the site.

Yours Sincerely,
For **WYG ENVIRONMENT**

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

Simon Johnson
Associate

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

5th Floor, Longcross Court, 47 Newport Road, Cardiff CF24 0AD
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SITE

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REV	DESCRIPTION	BY	CHK	APP	DATE

5th FLOOR, CONCORDE COURT
41 NEWPORT ROAD
CARDIFF
CF24 0AD
TEL: +44 (0)29 2032 8199
FAX: +44 (0)29 2045 5521
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A1	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641	B116	GEO	1	00

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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SJ	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Plot 35	1



WYG Environment
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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 36	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 2



Plate Title	Plate No
Plot 37	3



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 38	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 4

Ref: Z:\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 39 to 43\A069641-5 LetRpt Plots 39 to 43.doc

Date 26th September 2017

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 39 to 43.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 39 to 43 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 39 to 43 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 1 to 38 inclusive, 44 to 57 inclusive, 82 to 99 inclusive and 107 to 113 inclusive. Plots 58 to 81 comprise apartments without garden areas whilst Plots 100 to 106 are to be completed at a later date.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 22nd September 2017. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 39 to 43.

The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 39	600	150	**750**
Plot 40	450	250	**700**
Plot 41	450	250	**700**
Plot 42	450	350	**800**
Plot 43	400	400	**800**

* Minimum thickness - base of cap not reached

Completion Statement - Plots 39 to 43

This letter report is solely in reference to Plots 39 to 43 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 39 to 43 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 39 to 43 has been assessed through the inspection of nine trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 39 to 43.

No comment is made on the condition of the remainder of the site.

Yours Sincerely,
For **WYG ENVIRONMENT**

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

Simon Johnson
Associate

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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Tel: +44 (0)29 2082 9200 Fax: +44 (0)29 2045 5321 Email: info@wyg.com www.wyg.com

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

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SITE

EASTLEIGH

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47 NEWPORT ROAD
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CF24 0AD

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FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641	5 8116	GEO	1	00

WYG Group Ltd.

N



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SJ	Drawing No.: Figure 2

PHOTOGRAPHS

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ



Plate Title	Plate No
Plot 39	1



WYG Environment 5th Floor, Longcross Court, 47 Newport Road, Cardiff Tel: 02920 829200 Fax: 02920 455321 Environmental Consultancy Ground Engineering Services	Project Mill Street, Eastleigh	Plate Title Plot 40	
	Client Taylor Wimpey	Checked by SJ	Plate No. 2



Plate Title	Plate No
Plot 41	3



WYG Environment
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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 42	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 4



Plate Title	Plate No
Plot 43	5

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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh		
Client: Taylor Wimpey	Checked by: SJ	Plate No.

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 44-47, 52-54, 56-57\A069641-5 LetRpt Plots 44-47, 52-54, 56-57.doc

Date 6th October 2016

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 44-47, 52-54, 56 & 57.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 44-47, 52-54, 56 & 57 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 44-47, 52-54, 56 & 57 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 1-5, 85, 86 and 90 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 6th October 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 44-47, 52-54, 56 & 57.

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 44	350mm	350mm	**700mm**
Plot 45	400mm	200mm	**600mm**
Plot 46	300mm	400mm	**700mm**
Plot 47	500mm	100mm	**600mm**
Plot 52	800mm	N/A	**800mm**
Plot 53	900mm	N/A	**900mm**
Plot 54	800mm	N/A	**800mm**
Plot 56	800mm	N/A	**800mm**
Plot 57	700mm	N/A	**700mm**

* Minimum thickness - base of cap not reached

Completion Statement - Plots 44-47, 52-54, 56 & 57

This letter report is solely in reference to Plots 44-47, 52-54, 56 & 57 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 44-47, 52-54, 56 & 57 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 44-47, 52-54, 56 & 57 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 44-47, 52-54, 56 & 57.

No comment is made on the condition of the remainder of the site.

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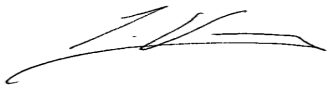
Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

Yours Sincerely,
For **WYG ENVIRONMENT**





Sarah Roberts
Senior Geo-Environmental Engineer

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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FIGURES

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DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

N

SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

Bishopstoke

North Stoneham

Itchen Valley Country Park

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CARDIFF
CF24 0AD

TEL: +44 (0)29 2032 0769
FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Plot 44	7



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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 45	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 8



Plate Title	Plate No
Plot 46	9



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Tel: 02920 829200
Fax: 02920 455321
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Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 47	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 10



Plate Title	Plate No
Plot 52	11



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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 53	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 12



Plate Title	Plate No
Plot 54	13



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Tel: 02920 829200
Fax: 02920 455321
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Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 56	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 14



Plate Title	Plate No
Plot 57	9

BLANK

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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Blank	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 10

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 48-51, 55, 82-84\A069641-5 LetRpt Plots 48-51,55,82-84.doc

Date 13th October 2016

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 48-51, 55, 82-84.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 48-51, 55, 82-84 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

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>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 48-51, 55, 82-84 of the development only as shown in Figure 2.

Similar reports have previously been prepared for Plots 1-5, 44-47, 52-54, 56 & 57, 85, 86 and 90 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 6th October 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 48-51, 55, 82-84.

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 48	600mm	N/A	**600mm**
Plot 49	300mm	600mm	**900mm**
Plot 50	250mm	500mm	**700mm**
Plot 51	800mm	N/A	**800mm**
Plot 55	600mm	N/A	**600mm**
Plot 82	600mm	100mm	**700mm**
Plot 83	400mm	200mm	**600mm**
Plot 84	400mm	250mm	**650mm**

Completion Statement - Plots 48-51, 55, 82-84

This letter report is solely in reference to Plots 48-51, 55, 82-84 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 48-51, 55, 82-84 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 48-51, 55, 82-84 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 48-51, 55, 82-84.

No comment is made on the condition of the remainder of the site.

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WYG Environment Planning Transport Ltd Registered in England Number: 3050297
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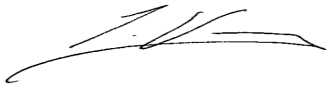
Yours Sincerely,
For **WYG ENVIRONMENT**





Sarah Roberts
Senior Geo-Environmental Engineer

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

5th Floor, Longcross Court, 47 Newport Road, Cardiff CF24 0AD
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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ

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SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

Bishopstoke

North Stoneham

Itchen Valley Country Park

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CARDIFF
CF24 0AD

TEL: +44 (0)29 2032 0769
FAX: +44 (0)29 2045 5321
e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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	Client: Taylor Wimpey PLC	Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

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Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ



Plate Title	Plate No
Plot 48	1



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 49	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 2



Plate Title	Plate No
Plot 50	3



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 51	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 4



Plate Title	Plate No
Plot 55	5



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 82	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 6



Plate Title	Plate No
Plot 83	7



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 84	
Client: Taylor Wimpey	Checked by: SR	Plate No.: 8

Ref: \\CARDIFF31\Consulting\dataold\Environmental\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 87-89\A069641-5 LetRpt Plots 87, 88, 89.doc

Date 10th August 2016

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 87, 88 & 89.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 87, 88 & 89 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 87, 88 & 89 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 1 to 5 inclusive, 85, 86 and 90 to 99 inclusive and 107 to 113 inclusive.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 2nd August 2016. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 87, 88 & 89.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 87	500mm	>200mm	**>700mm**
Plot 88	500mm	100mm	**600mm**
Plot 89	>600mm	Not identified	**>600mm**

Completion Statement - Plots 87, 88 & 89

This letter report is solely in reference to Plots 87, 88 & 89 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 87, 88 & 89 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 87, 88 & 89 has been assessed through the inspection of two trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 87, 88 & 89. No comment is made on the condition of the remainder of the site.

Yours Sincerely,

For **WYG ENVIRONMENT**

Luzia Kathriner
Geo-Environmental Engineer

Sarah Roberts
Senior Consultant

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Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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SITE

EASTLEIGH

Chandler's Ford

Allbrook

Boyatt Wood

Stoke Common

Stoke Park Wood

Bishopstoke

North Stoneham

Itchen Valley Country Park

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Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

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Plots 87, 88 & 89

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Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: LK	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Cap Validation Excavation - Plot 87	1



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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Cap Validation Excavation - Plot 88	
Client: Taylor Wimpey	Checked by: LK	Plate No.: 2



Plate Title	Plate No
Cap Validation Excavation - Plot 89	3

BLANK

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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Blank	
Client: Taylor Wimpey	Checked by: LK	Plate No.: 4

Ref: Z:\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Plots 100 to 106\A069641-5 LetRpt Plots 100 to 106.doc

Date 16th November 2017

Lauren Wiltshire
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Lauren,

Capping System Validation – Mill Street, Eastleigh Plots 100 to 106.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the remediation of Plots 100 to 106 with respect to ground contamination.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority verification by the competent person approved under the provisions of*

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condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site is currently undergoing a phased development and as such, this report is presented in order to document the verification process of the installation if the capping system (item 2 above) for Plots 100 to 106 of the development only as shown in Figure 2.

Similar reports have previously been prepared for plots 1 to 57 inclusive, 82 to 99 inclusive and 107 to 113 inclusive. Plots 58 to 81 comprise apartments without garden areas.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 3rd November 2017. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in Plots 100 to 106.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil. An orange 'no dig' membrane was placed underneath the imported materials which was identified in the base of each excavation.

Hand dug inspection pits were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
Plot 100	250	400	**650**
Plot 101	500	300	**800**
Plot 102	450	300	**750**
Plot 103	200	400	**600**
Plot 104	200	400	**600**
Plot 105	200	450	**650**
Plot 106	200	400	**600**

* Minimum thickness - base of cap not reached

Completion Statement - Plots 100 to 106

This letter report is solely in reference to Plots 100 to 106 of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site will be subject to further capping system validation works and reporting on completion of the construction of the capping system.

A capping system has been constructed in the soft landscaping areas of Plots 100 to 106 in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system in Plots 100 to 106 has been assessed through the inspection of nine trial pits (one per residential plot) in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in Plots 100 to 106.

No comment is made on the condition of the remainder of the site.

Yours Sincerely,
For **WYG ENVIRONMENT**

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Simon Johnson
Associate

Ian Viney
Associate Director

Enc.

Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641	5 8116	GEO	1	00

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	Client: Taylor Wimpey PLC	Checked by: SJ	Drawing No.: Figure 2

PHOTOGRAPHS

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Plate Title	Plate No
Plot 100	1



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Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 101	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 2



Plate Title	Plate No
Plot 102	3



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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 103	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 4



Plate Title	Plate No
Plot 104	5



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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	Plot 105	
Client: Taylor Wimpey	Checked by: SJ	Plate No.



Plate Title	Plate No
Plot 106	7

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Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh		
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 2

Ref: Z:\projects\A069641-5 Mill St, Eastleigh Validation\Report\Cap Validation Reports\Open Space and Play Area\A069641-5 LetRpt Open Space Area.doc

Date 14th February 2018

Martin Stevens
Taylor Wimpey Southern Counties
Colvedene Court
Wessex Business Park,
Colden Common
SO21 1WP

Dear Martin,

Capping System Validation – Mill Street, Eastleigh Open Space Amenity and Play Area Near Plots 58 to 80.

WYG was commissioned by Taylor Wimpey Southern Counties to provide a verification services for the installation of a clean capping system at the residential development off Mill Street, Eastliegh. The site is the location of the former Travis Perkins builder's merchants.

This letter report describes the validation of the capping layer for the open space amenity and play area opposite Plots 58 to 80 in the south of the site.

Background

Conditional planning permission has been granted by Eastleigh Borough Council (Reference F/11/70108) for the development of 113 residential properties (mixed 2, 3, and 4 storey houses and flats) and associated infrastructure on the site.

The key conditions relevant to the work presented herein relates to Conditions 30 and 31 which states that.

> *(30) Prior to the commencement of the development hereby permitted, the following information must be submitted to, and approved in writing by the Local Planning Authority: a. A Desk Study documenting all the previous and existing land uses of the site and adjacent land in accordance with national guidance as set out in Contaminated Land Reports Nos. 1 and 2, and BS10175:2010 Investigation of potentially contaminated sites - Code of Practice, and, unless otherwise agreed with the Local Planning Authority; b. A site investigation report documenting the ground conditions of the site and incorporating chemical and gas analysis identified as appropriate by the desk study in accordance with BS10175:2001, and unless otherwise agreed with the Local Planning Authority; c. A detailed scheme for remedial works and measures to be undertaken to avoid the risk from contaminants and/or gases when the site is developed and proposals for future maintenance and monitoring. Such a scheme shall include nomination of a competent person to oversee the implementation of the works. Reason: To ensure satisfactory investigation/remediation of potential land contamination.*
>
> *(31) The development hereby permitted shall not be occupied / brought into use until there has been submitted to the Local Planning Authority*

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verification by the competent person approved under the provisions of condition 30(c) that any remediation scheme required and approved under the provisions of condition 30(c) has been implemented fully in accordance with the approved details (unless varied with the written permission of the Local Planning Authority in advance of implementation).Unless agreed in writing with the Local Planning Authority such verification shall comprise: a. As built drawings of the implemented scheme; b. Photographs of the remediation works in progress; c. Certificates demonstrating that imported and / or material left in situ is free from contamination; Thereafter the scheme shall be monitored and maintained in accordance with the scheme approved under condition 30(c). Reason: To ensure satisfactory investigation/remediation of potential land contamination.

A Remediation Strategy has been developed by WYG for the site and has previously been submitted to the Local Authority (WYG reference "Mill Street, Eastleigh, – Outline Remediation Strategy, WYG February 2015).

In summary the report outlined the following aspects;

1. Excavation and removal of existing hardstanding and sub-base where present.
2. Installation of a cover system consisting of 600mm thick cap of clean material
3. Localised excavation of more significant contamination
4. Proactive Approach to any previously unidentified contamination.

The site has recently undergone a phased development and as such, this report is presented in order to document the verification process of the installation of the capping system (item 2 above) for the open space amenity and play area near Plots 58 to 80 of the development only as shown in Figure 2. Similar reports have previously been prepared for the other various residential plots on site.

The remainder of the site is still awaiting the completion of the construction of the capping system and subsequent verification and as such further reporting will be presented on completion of these works in due course. On completion of the construction of the capping system an overarching validation report will be issued for the whole site.

Capping Validation

The capping system was constructed from layers of sub soil and topsoil and was specified to be a minimum thickness of 600mm.

The validation of the capping system was undertaken in two phases to confirm both the chemical suitability of the material and the thickness of the constructed capping system.

Measurement of the thickness of the capping material was validated on the 7th February 2018. Photographic records of the site visits appended to this report document the validation process.

Chemical Suitability

The chemical suitability of the topsoil and sub soil was confirmed through chemical analysis of the material prior to its importation to site. Chemical test results from the topsoil and sub soil were provided by the contractor and were obtained from a stockpile of material located off site which was subsequently placed in the open space amenity and play area.

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The chemical laboratory results were screened against the import criteria outlined by WYG for a residential end use scenario with associated plant uptake. **Both the topsoil and sub soil materials were shown to meet the import criteria for the designated end use**. The laboratory results are appended to this report.

Thickness

The thickness of the installed cap was inspected after the importation and placement of the topsoil and sub soil.

Hand dug inspection pits (HP1 to HP4) were excavated through the capping system to a minimum depth of 600mm. Photographic plates are included in the site visit reports appended to this report. The table below outlines the capping system recorded during the validation process. The location of the hand pits is shown on Figure 2 enclosed.

Plot	Topsoil Thickness	Sub Soil Thickness	Total Thickness
HP1	200mm	400mm	**600mm**
HP2	200mm	400mm	**600mm**
HP3	250mm	350mm	**600mm**
HP4	150mm	500mm	**650mm**

Completion Statement – Open Space Amenity and Play Area

This letter report is solely in reference to the open space amenity and play area of the Taylor Wimpey development site at Mill Street, Eastleigh. The remainder of the site is subject to further capping system validation works which are detailed under separate reports.

A capping system has been constructed in the open space amenity and play area in order to break the pathway between the identified contaminants in the made ground and site users.

The capping system was constructed using clean imported topsoil and sub soil, which was confirmed to meet the import criteria outlined by WYG for a residential end use scenario with associated plant uptake.

The capping system has been assessed through the inspection of four trial pits in areas of soft landscaping. The inspection pits indicate that the minimum thickness of 600mm had been met in the open space amenity and play area.

No comment is made on the condition of the remainder of the site.

Yours Sincerely,
For **WYG ENVIRONMENT**

Simon Johnson
Associate

Ian Viney
Associate Director

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Figure 1 Site Location Plan
Figure 2 Site Layout including Location of Inspection Pits

Photographs

Chemical Laboratory Results

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e-mail: cardiff@wyg.com

Client: TAYLOR WIMPEY PLC

Project: MILL STREET, EASTLEIGH

Drawing Title: SITE LOCATION PLAN

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
NTS	SR	14/12/15	SR	14/12/15	IV	14/12/15

Project No.	Office	Type	Drawing No.	Revision
A069641-5	8116	GEO	1	00

© WYG Group Ltd.

N



Open Space and Play Area

WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project: Mill Street, Eastleigh		Drawing Title: Site Layout Plan	
Client: Taylor Wimpey PLC		Checked by: SR	Drawing No.: Figure 2

PHOTOGRAPHS

5th Floor, Longcross Court, 47 Newport Road, Cardiff CF24 0AD
Tel: +44 (0)29 2082 9200 Fax: +44 (0)29 2045 5321 Email: info@wyg.com www.wyg.com

WYG Environment Planning Transport Ltd Registered in England Number: 3050297
Registered office: Arndale Court, Otley Road, Headingley, LS6 2UJ



Plate Title	Plate No
HP1	1



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	HP2	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 2



Plate Title	Plate No
HP3	3



WYG Environment
5th Floor, Longcross Court, 47 Newport Road, Cardiff
Tel: 02920 829200
Fax: 02920 455321
Environmental Consultancy
Ground Engineering Services

Project	Plate Title	
Mill Street, Eastleigh	HP4	
Client: Taylor Wimpey	Checked by: SJ	Plate No.: 4

Appendix D – Photographic Plates



Plate 1 Excavation near TP211 looking south-east (12.03.2015)



Plate 2 Excavation near TP211 looking south (12.03.2015)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016



Plate 3 Excavation near TP211 looking north-west (13.03.2015)



Plate 4 Excavation near TP211 looking south (13.03.2015)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016



Plate 5 Excavation near TP211 - temporary stockpiles of contaminated material (13.03.2015)



Plate 6 Excavation near TP211 - stockpiles of contaminated material (13.03.2015)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016



Plate 7 Tanalising tank (28,000l) looking north-west (15.03.2008)



Plate 8 Tanalising plant looking north-east (incl. small fluid store) (15.03.2008)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

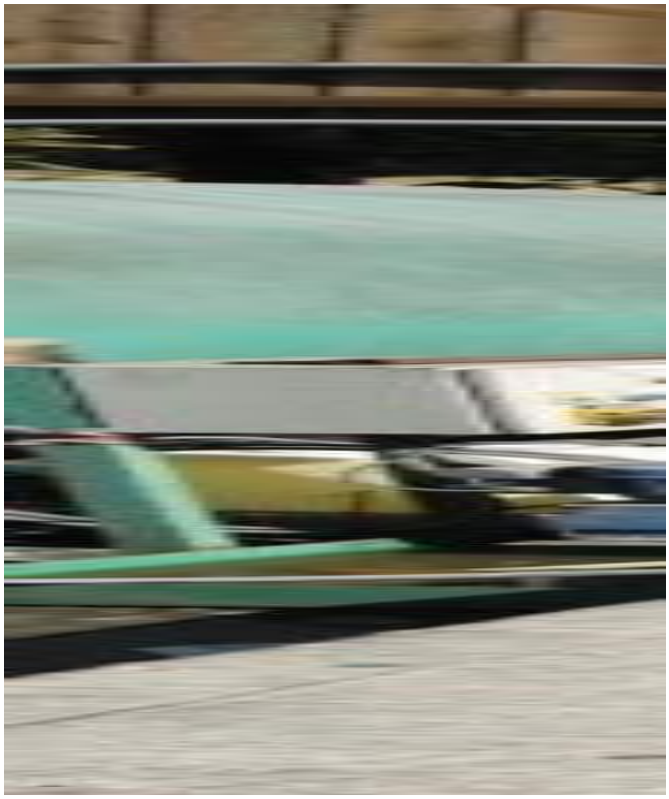
Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016



Plate 9 Pumping of fluid store (13.08.2014)



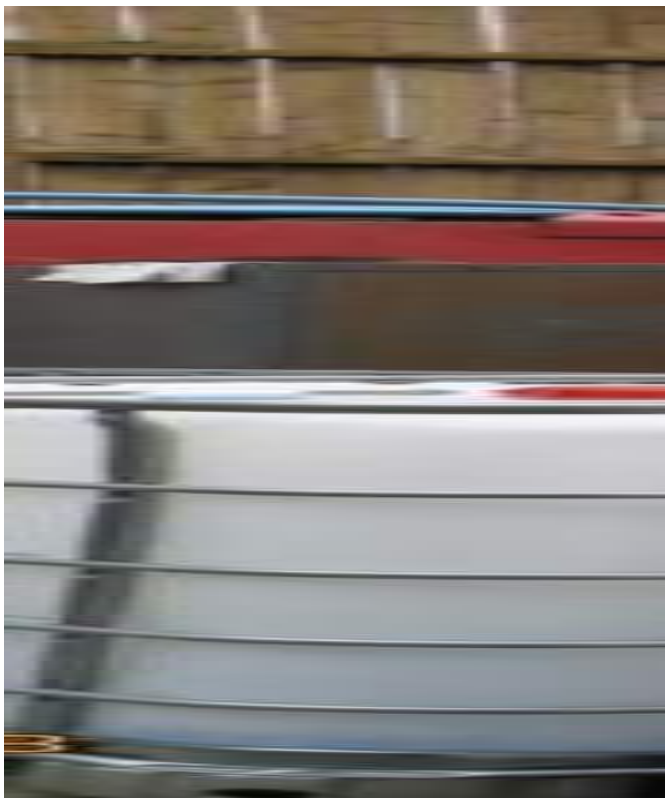


Plate 10 Pumping of fluids into IBCs (13.08.2014)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016



Plate 11 Securing lifting chaings (20.08.2014)



Plate 12 Crane removal of tank (20.08.2014)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016



Plate 13 Off-site removal of IBCs (20.08.2014)



Plate 14 Tank area following completion of works, looking north (20.08.2014)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016



Plate 15 Tanalising tank and plant area looking north (29.02.2016)



Plate 16 Validation trench along tanalising tank area (29.02.2016)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016

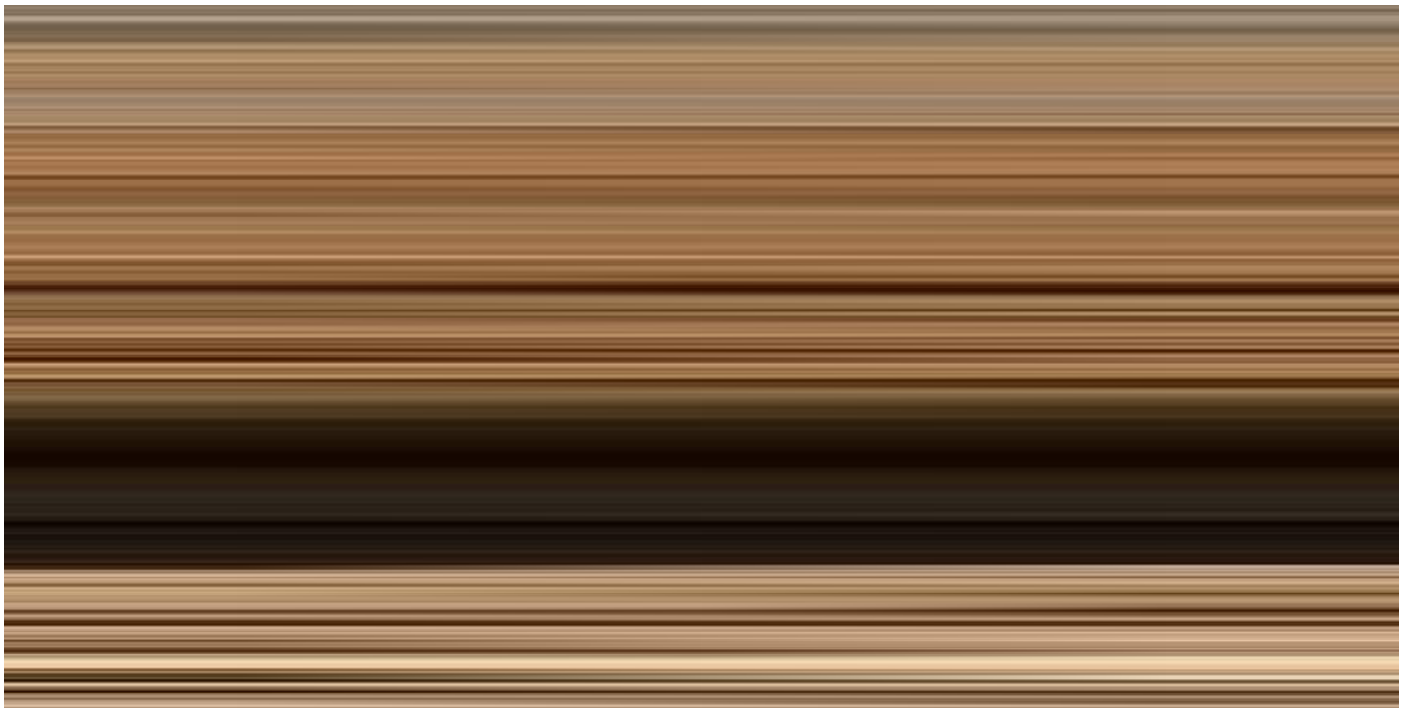


Plate 17 Excavation near tanalising tank area (29.02.2016)



Plate 18 Excavation near tanalising tank area looking west (29.02.2016)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016



Plate 19 Stockpile of contamiated material (29.02.2016)



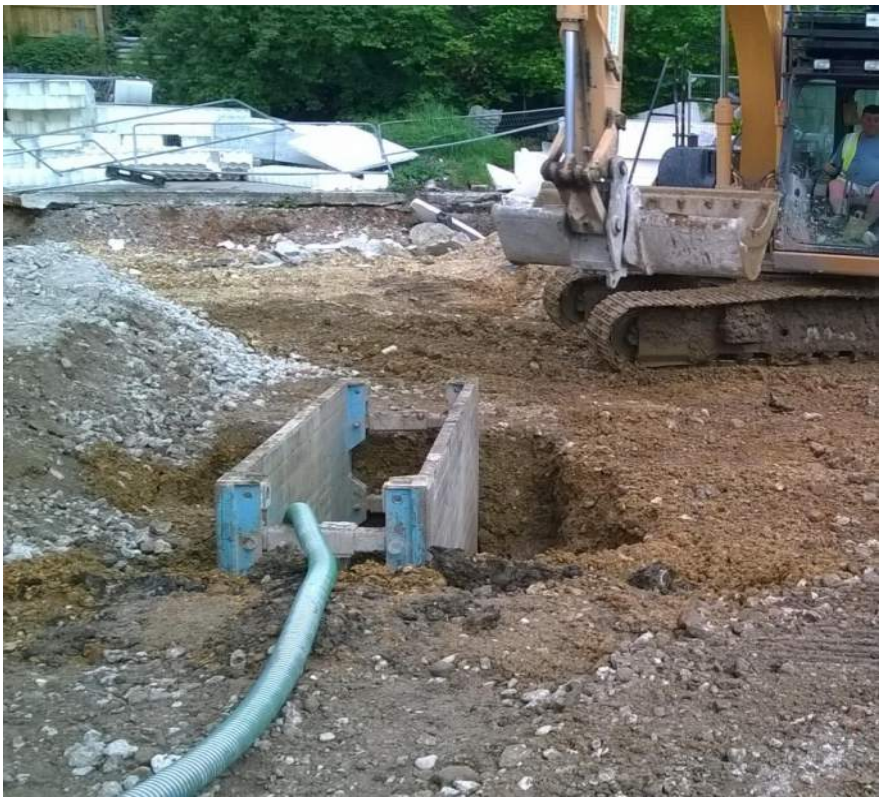


Plate 20 Validation trenches near tanalising tank area with dewatering and trenchbox (13.05.2016)

WYG Environment
5th Floor, Longcross Court
47 Newport Road
Cardiff
CF24 0AD

Tel: 029 20 829200
Fax: 029 20 455321
E-mail enviro.cardiff@wyg.com
Environmental Consultancy
Ground Technologies & Investigation

Project :-
Mill St., Eastleigh
Remedation Validation Report

Client: Taylor Wimpey UK Ltd

Project No.: A069641-5

Date : 22/07/2016

Appendix E – Waste Transfer Notes

TJ TRANSPORT LTD

Charity Farm, 127 Wickham Road, Fareham, Hampshire, PO17 5BP
Tel: 01329 226446 Fax: 01329 826167 www.tj-transport.co.uk
Carriers Registration Certificate No. **CBDU133054**

CONVEYANCE / TRANSFER NOTE

1335107

Driver Name:	M. Smith
Registration:	W3TJT
Date & Time:	23.5.16
Customer:	DR Groundworks - C/O Taylor Wimpey
Loaded at:	Mill St Eastleigh
Deliver to:	Lockhams Sheffield
Day work / waiting time or additional charges:	
Driver Signature:	
Disposal Signature:	
Disposal / Material Ticket Number:	

Inert Spoil	17 05 04		Asphalt	17 03 02	
Soils & Stone	17 05 04		Builders Waste	17 09 04	
Non-Haz Spoil	17 05 04	✓	Hardcore (MRF)	19 12 12	
Hazardous Spoil	17 05 03		Soils (MS)	19 12 12	
Hardcore	17 01 02				
Concrete	17 01 01		Other - Describe below		

Waste description & EWC / Materials: Non Haz Soils

Volume	15	M³	1 x LOAD	Load
Gross Weight				Tonnes
Nett Weight				Tonnes
Tare Weight				Tonnes

In accordance with the Weights and Measures Act 1985

SIC Code:

Construction	41.10		Demolition	43.11	
Civil Engineering	42.99		Waste Collection	38.11	

"I confirm that I have fulfilled my duty to apply the waste hierachy, as required by Regulation 12 of the waste (England and Wales) Regulation 2011"

Customer Signature: C Ball

Notes

Customers ordering vehicles off the public road do so entirely at their own responsibility.
Certified that the above particulars are true and relate to the material or waste being conveyed in the vehicle described, which material or waste is being so conveyed in pursuance of:
(a) a sale or agreement for the sale thereof made by the cubic tonne / metre / load
(b) an agreement for the carriage thereof made by the cubic tonne / metre / load

TJ TRANSPORT LTD

Charity Farm, 127 Wickham Road, Fareham, Hampshire, PO17 5BP
Tel: 01329 226446 Fax: 01329 826167 www.tj-transport.co.uk
Carriers Registration Certificate No. **CBDU133054**

CONVEYANCE / TRANSFER NOTE

1335110

Driver Name:	M Smith
Registration:	W3TJT
Date & Time:	23.5.16
Customer:	DR Groundworks C/O Taylor Wimpey
Loaded at:	Mill St Eastleigh
Deliver to:	Lockhams Sheffield
Day work / waiting time or additional charges:	
Driver Signature:	
Disposal Signature:	
Disposal / Material Ticket Number:	

Inert Spoil	17 05 04		Asphalt	17 03 02	
Soils & Stone	17 05 04		Builders Waste	17 09 04	
Non-Haz Spoil	17 05 04	✓	Hardcore (MRF)	19 12 12	
Hazardous Spoil	17 05 03		Soils (MS)	19 12 12	
Hardcore	17 01 02				
Concrete	17 01 01		Other - Describe below		

Waste description & EWC / Materials: Non Haz Soil

Volume	15	M³	1 x LOAD	Load
Gross Weight				Tonnes
Nett Weight				Tonnes
Tare Weight				Tonnes

In accordance with the Weights and Measures Act 1985

SIC Code:

Construction	41.10		Demolition	43.11	
Civil Engineering	42.99		Waste Collection	38.11	

"I confirm that I have fulfilled my duty to apply the waste hierachy, as required by Regulation 12 of the waste (England and Wales) Regulation 2011"

Customer Signature: C Ball

Notes

Customers ordering vehicles off the public road do so entirely at their own responsibility.
Certified that the above particulars are true and relate to the material or waste being conveyed in the vehicle described, which material or waste is being so conveyed in pursuance of:

Cleansing Service Group

Registered Waste Carrier Reg. No. CB/YN5477QF
Issued by the Environment Agency

Ticket No.

Section A - Person collecting the waste (Transferee)

CLEANSING SERVICE GROUP

Section B - Current holder of the waste (Transferor) - WASTE PRODUCER

SIC

Account Company

Contact

Site

If the holder is not the producer please indicate the capacity in which the holder operates in accordance with the duty of care code of practice

Licence No./Reg. No.

Issued by

PRODUCER DECLARATION

I certify that the waste collected is as described, and that the work has been carried out to my satisfaction, pursuant to the price agreed and in accordance with conditions overleaf.

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) regulations 2011

Signed

Printed Name
(BLOCK CAPITALS)

Date

Section C - Description of the waste

The waste is contained in :-

Quantity (Approx) 1000

Units

Trans. ID

If the description/containment is not correct please change

Section D - Work ticket details

Order No.

Service

Job No.

Area No.

Vehicle Registration

Driver
(BLOCK CAPITALS)

Signed

Collection Date Time

Section E1 - Disposal details

Name & Address of Disposal Point

Licence or Exemption Cert No.

Issued by.

Date(s) of Transfer

Time(s) of Transfer

Ticket No(s).

E2 Person receiving waste at the site (Transferee)

Signed

Full Name
(BLOCK CAPITALS)

Representing

Complete this box if different from driver above

E3 Person delivering waste at the site (Transferor)

Signed

Full Name
(BLOCK CAPITALS)

Representing

in case of query please contact

Time on Job From: To:

Form HWCN01v111 PLEASE COMPLETE IN BLOCK CAPITALS

The Hazardous Waste Regulations 2005 Consignment Note

Cleansing Service Group
Waste Solution Specialists

PRODUCER'S/HOLDER'S/CONSIGNOR'S COPY/RETURN COPY (Delete as appropriate)

PART A Notification details

1. Consignment Note Code: TWPYSC/7162 8

2. The waste described below is to be removed from (name, address, postcode, telephone, e-mail, facsimile): D R GROUNDWORKS LTD
TAYLOR WIMPEY, MILL STREET, EASTLEIGH, SO50 4NF.
TEL:07734 865301, FAX:0.
E-MAIL:@

3. Premises code (where applicable) TWPYSC

4. The waste will be taken to (name, address & postcode):
CLEANSING SERVICE GROUP LTD
GRANGE ROAD, BOTLEY, SOUTHAMPTON, HANTS, SO30 2GD.

5. The waste producer was (if different from 2) (name, address, postcode, telephone, e-mail, facsimile):

PART B Description of the waste

If continuation sheet used, tick here ☐

1. The process giving rise to the waste(s) was:
SURFACE WATER DRAINAGE

2. SIC for the process giving rise to the waste: 43.11/

3. WASTE DETAILS (where more than one waste type is collected all of the information given below must be completed for each EWC identified)

Description of waste	List of wastes (EWC code)(6 digits)	~~Quantity (kg)~~ gall	The chemical/biological components in the waste and their concentrations are: Component	Concentration (% or mg/kg)	Physical form (gas, liquid, solid, powder, sludge or mixed)	Hazard code(s)	Container type, number and size
OIL/WATER	130507	1000	OIL	<2.5%	LIQUID	HP7	TANKER

The information given below is to be completed for each EWC identified

EWC code	UN identification number(s)	Proper shipping name(s)	UN class(es)	Packing group(s)	Special handling requirements
130507	0000	NON DANGEROUS GOODS			PPE

PART C Carrier's certificate

(If more than one carrier is used, please attach schedule for subsequent carriers. If schedule of carriers is attached tick here. ☐)

I certify that I today collected the consignment and that the details in A2, A4 and B3 are correct and I have been advised of any specific handling requirements

Where this note comprises part of a multiple collection the round number and collection number are:
MALCOLM MAIC /

1. Carrier Name:
On behalf of (name, address, postcode, telephone, e-mail, facsimile)
CSG LTD, GRANGE ROAD, BOTLEY, SOUTHAMPTON, SO30 2GD.
TEL:01489 778250, FAX:01489 793931.
E-MAIL:david.gailer@csg.co.uk

2. Carrier registration no./reason for exemption: CBDU89037

3. Vehicle registration no. (or mode of transport, if not road): WX56 BHU

Signature:

Date 13052016 Time

PART D Consignor's certificate

I certify that the information in A, B and C has been completed and is correct, that the carrier is registered or exempt and was advised of the appropriate precautionary measures. All of the waste is packaged and labelled correctly and the carrier has been advised of any special handling requirements.

I confirm that I have fulfilled my duty to apply the waste hierarchy as required by Regulation 12 of the Waste (England and Wales) Regulations 2011.

1. Consignor name: P WARDLE
On behalf of (name, address, postcode, telephone, e-mail, facsimile)

Signature:

Date 13052016 Time

PART E Consignee's certificate (where more than one waste type is collected all of the information given below must be completed for each EWC)

Individual EWC code(s) received	Quantity of each EWC code received (kg)	EWC code accepted/rejected	Waste management operation (R or D code)

1. I received this waste at the address given in A4 on: Date Time

2. Vehicle registration no. (or mode of transport if not road):

3. Where waste is rejected please provide details:

Name:

On behalf of (name, address, postcode, telephone, e-mail, facsimile):

I certify that waste permit/exempt waste operations number:

authorises the management of the waste described in B at the address given A4.

Signature

Where the consignment forms part of a multiple collection, as identified in Part C, I certify that the total number of consignments forming the collection are:

Date Time

Appendix F – Landgas Protection Measures Inspection Records

PAGeoContracting

1291

18 AUG 2015

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : Housing.

CUSTOMER : D R GROUNDWORKS

START DATE : 6.8.15 END DATE : 7.8.15

AREA/PLOT Nos. COMPLETED : Plots 1-6.

(State if work was **perimeter** or **infill** or state **gridlines**)

Full Linefout using continuBRANE sealing

All pipes & corners using SAGA.

PENETRATION QUANTITES

Pipes less than 130mm	36	Lift pits wrapped	
Pipes more than 130mm		Manhole lids sealed	
Ducts (state size)		Piles	
Steel columns		Corners	60
Windposts / Doorbars		Drainage hangers (self adhesive)	
Periscope vents		Self adhesive to concrete etc	
Starter bars		P.S. Hooks	
Battening lin m			

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) ADAM MCDERMOTT

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) CHRIS BALL

SIGNATURE

DISTRIBUTION : **WHITE COPY** – Left at site with site agent **YELLOW & PINK COPY** – Retained & returned to PAG office

CHAS Contractors Health & Safety Assessment Scheme Accredited Contractor

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park Corby, Northants, NN17 5JG

FAIR PAYMENT Contractor

SITE SUPERVISOR :- CHRIS BARR
INSTALLATION SUPERVISOR :- ADAM McCORMOT

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH.	Gas characteristic situation:
Job number: PLOTS 1-6	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOTS 1-6
Date:	Building description: HOUSES
Visit by: PAGED CONTRACTING	Foundation type: (suspended floor/raft/other) STRIP FOUNDATION SUSPENDED FLOOR
Weather at time of inspection:	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS
1.2	Gas membrane type	MONAFLEX CO2 LOW PERMABILITY. GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR. (SELF ADHESIVE GAS RESISTANCE MEMBRANE
1.5	Lapping design	150 MM LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150 MM, JOINTS & SEALS TO CORNERS REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICES ENTERIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED.
2 Passive venting		
2.1	Sub-floor void	OPEN VOID. 350MM / 400MM INSPECTED
2.2	External wall airbricks	AIR BRICKS ARE IN PLACE
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED.
3 Active venting		
3.1	System details	NATURAL VENTS USING TELESCOPIC VENTS 450MM FROM CORNERS & EVERY 1.8 WHERE APPLICABLE
Additional notes:		

PAGeoContracting

1955

HAND OVER / SIGN OFF

PROJECT NO : 4358

PROJECT : Housing

CUSTOMER : DR Groundworks

START DATE : 15.10.15 END DATE : 15.10.15

AREA/PLOT Nos. COMPLETED : Plots 7, 8, 8 9

(State if work was **perimeter** or **infill** or state **gridlines**)

Full Linear using Co2 Sealing HH

Piles & Corners using SAGR

PENETRATION QUANTITES

Pipes less than 130mm 15	Lift pits wrapped
Pipes more than 130mm	Manhole lids sealed
Ducts (state size)	Piles
Steel columns	Corners 36
Windposts / Doorbars	Drainage hangers (self adhesive)
Periscope vents	Self adhesive to concrete etc
Starter bars	P.S. Hooks
Battening lin m	

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) Adam McDermott

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) Chris Barr

SIGNATURE

DISTRIBUTION : **WHITE COPY** – Left at site with site agent **YELLOW & PINK COPY** – Retained & returned to PAG office

CHAS CONTRACTORS HEALTH & SAFETY ASSESSMENTS SCHEME Accredited Contractor www.chas.gov.uk

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park Corby, Northants, NN17 5JG

FAIR PAYMENT Campaign

Tel: 01536 740040 Fax: 01536 740044 e-mail: office@pageo.co.uk web: www.pageo.co.uk
Register in England and Wales No. 7088853 Registered office as above.

Site & Sub Grade Acceptance

PAGeoContracting

Project No : 4558 **Project Name :** Housing

Contractor : DR Groundworks **Project address :** EASTLEIGH

Installation Operative(s): ADAM

PAGC Ltd hereby acknowledge that the above contractor has fulfilled their obligations in respect of clearing of debris and waste product as expected under NOS QUN 846 in preparation of the intended works, and maintained a clear working area in accordance with the subcontract order documentation.

PAGC Ltd Signature : ..... **Date :** 15/10/15

Time of Arrival : 7 : 30 **Waiting Time : Hrs** 0 **Mins** 0

In the event that PAGC Ltd deems that the sub base is unsuitable please contact 07802 742480

Rectified by site ☐ Assist with clearing/delayed start ☐ = hours. Unresolved/unable to work ☐

Customer Signature : ..... **Date :** 15/10/15

Site specific Risk Assessment(s) and Method Statement (RAMS) have been developed, incorporating other identified hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of PAGC.

PLEASE LEAVE AREA BELOW BLANK

DISTRIBUTION : **WHITE COPY** – Left at site with site agent. **YELLOW COPY** – Retained & returned to PAG office

CHAS Accredited Contractor www.chas.gov.uk

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

FAIR PAYMENT Campaign

IN SITE SUPERVISOR.:- CHRIS BAER CHRBAER
INSTALLATION ENGINEER.:- ADAM MCDERMOTT

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOTS 7-9	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOTS 7-9
Date: 15-10-15.	Building description: HOUSES.
Visit by:	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: CLEAR & SUNNY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1	**Gas membrane**	
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS
1.2	Gas membrane type	MONOFLEX CO2 LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE)
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150MM JOINTS & SEALS TO CORNERS, REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICE ENTERIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED.
2	**Passive venting**	
2.1	Sub-floor void	OPEN VOID 350mm/400mm INSPECTED 14/10/15 C.A.Poole
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3	**Active venting**	
3.1	System details	NATURAL VENT USING TELESCOPIC VENTS 450mm FROM CORNERS & EVERY 1.8m.
Additional notes:		

1825

PAGeoContracting

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : HOUSING

CUSTOMER : DR GROUNDWORKS

START DATE : 1/4/15 END DATE :

AREA/PLOT Nos. COMPLETED : 85 86 87 88 89

(State if work was **perimeter** or **infill** or state **gridlines**)

CARRIED OUT COMPLETE CO² LINE OUT TO PLOTS SEALING CORNERS & PIPES USING SIKA

PENETRATION QUANTITES

Pipes less than 130mm	25	Lift pits wrapped	
Pipes more than 130mm		Manhole lids sealed	
Ducts (state size)		Piles	
Steel columns		Corners	40
Windposts / Doorbars		Drainage hangers (self adhesive)	
Periscope vents		Self adhesive to concrete etc	
Starter bars		P.S. Hooks	
Battening lin m			

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) Ricky Grady

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) Chris Barr

SIGNATURE Chris Barr

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PAGeoContracting Ltd. Darwin House, Corby Gate Business Park Corby, Northants, NN17 5JG

FAIR PAYMENT Campaign

Tel: 01536 740040 Fax: 01536 740044 e-mail: office@pageo.co.uk web: www.pageo.co.uk
Register in England and Wales No. 7088853 Registered office as above.

SITE SUPERVISOR : CHRIS BARR 01-04-2015
INSTALLATION SUPERVISOR RICKY GRADY 1/4/15

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOT 85 - 87	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOT 85-87
Date: 1-04-2015	Building description: HOUSES
Visit by:	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: CLEAR, WINDY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS
1.2	Gas membrane type	MONAFLEX C04 LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE RESISTANCE MEMBRANE. GAS
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAP MIN 150mm, JOINT & SEALD TO CORNERS REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICE ENTERIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 350/450 mm INSPECTED 31-03-2015
2.2	External wall airbricks	AIR BLICKS ARE IN PLACE
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3 Active venting		
3.1	System details	NATURAL VENT USING TELESCOPIC VENTS 450mm FROM CORNERS & EVERY 1.8 WHERE APPLICABLE
Additional notes:		

SITE SUPERVISOR: CHRIS BARR 01-04-2015

INSTALLATION SUPERVISOR RICKY GRADY 1/4/15

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOT 88 & 89	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOT 88 & 89
Date: 01-04-2015	Building description: HOUSE'S
Visit by:	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection:	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX CO2 LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF-ADHESIVE GAS RESISTANCE MEMBRANE
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150mm JOINTS & SEALS TO CORNERS REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICE ENTERIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 300mm INSPECTED 31-03-2015
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3 Active venting		
3.1	System details	NATURAL VENT USING TELESCOPIC VENTS 450mm FROM CORNERS & EVERY 1.8MHERE APPLICABLE
Additional notes:		

1844

PAGeoContracting

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : HOUSING

CUSTOMER : DR GROUNDWORKS LTD

START DATE : 10/6/15 END DATE : 11/6/15

AREA/PLOT Nos. COMPLETED : 44-46 111-113

(State if work was **perimeter** or **infill** or state **gridlines**)

CARRIED OUT FULL CO^2 LINE OUT TO PLOTS.
SEALING CORNERS & PIPES USING SIKA

PENETRATION QUANTITES

Pipes less than 130mm	30	Lift pits wrapped	
Pipes more than 130mm		Manhole lids sealed	
Ducts (state size)		Piles	
Steel columns		Corners	
Windposts / Doorbars		Drainage hangers (self adhesive)	
Periscope vents		Self adhesive to concrete etc	
Starter bars		P.S. Hooks	
Battening lin m			

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) RICK GRADY

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) D WATKINSON

SIGNATURE

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FAIR PAYMENT Campaign

Tel: 01536 740040 Fax: 01536 740044 e-mail: office@pageo.co.uk web: www.pageo.co.uk
Register in England and Wales No. 7088853 Registered office as above.

SITE SUPERVISOR :- CHRIS BARR 03-06-2015.
INSTALLATION SUPERVISOR :- RICK GRADY 3/6/2015

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOT 109 – 113	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOTS 109-113.
Date: 03-06-2015	Building description: HOUSES
Visit by: PAGEO CONTRACTING	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & SUNNY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX CGB LOW PERMEABILITY GAS BARRIER GREEN TO BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150mm JOINTS & SEALS TO CORNERS, REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICES & ENTRIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 300mm INSPECTED 02-06-2015
2.2	External wall airbricks	
2.3	Internal sleeper walls	ONE INTERNAL SLEEPER WALL TO EVERY PLOT VENTILATION BRICKS ARE CONSTRUCTED IN WALL.
2.4	External vent trenches/ducts	NONE.
3 Active venting		
3.1	System details	
Additional notes:		

SITE SUPERVISOR : CHRIS BARR

INSTALLATION SUPERVISOR :

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOTS 44-46	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOT 44-46
Date: 25-06-15	Building description: HOUSES
Visit by: PAGEO CONTRACTING	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & SUNNY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX CG2 LOW PERMEABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDERS
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150mm JOINTS & SEALS TO CORNERS & REVEALS & SERVICES (SAGR
1.7	Service entries seals	ALL SERVICES & ENTRIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 300mm INSPECTED 04-06-15
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NONE
3 Active venting		
3.1	System details	
Additional notes:		

ADAM
PHIL

PAGeoContracting

1252

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : Housing.

CUSTOMER : D K Groundworks

START DATE : 13.4.15 END DATE : 13.4.15

AREA/PLOT Nos. COMPLETED : 90 - 94

(State if work was **perimeter** or **infill** or state **gridlines**)

Full Linecut oSing 60² membrane to above plots sealing all pipes & corners using sack.

PENETRATION QUANTITES

Pipes less than 130mm 30	Lift pits wrapped
Pipes more than 130mm	Manhole lids sealed
Ducts (state size)	Piles
Steel columns	Corners 60
Windposts / Doorbars	Drainage hangers (self adhesive)
Periscope vents	Self adhesive to concrete etc
Starter bars	P.S. Hooks
Battening lin m	

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) Adam McDermott

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) Chris Baker

SIGNATURE

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Register in England and Wales No. 7088853 Registered office as above.

Site & Sub Grade Acceptance

PAGeoContracting

Project No : 4558 **Project Name :** Meadow Taylor Lumley

Contractor : D R Groundworks **Project address :** Eastleigh (Southampton)

Installation Operative(s): Adam & Phil

PAGC Ltd hereby acknowledge that the above contractor has fulfilled their obligations in respect of clearing of debris and waste product as expected under NOS QUN 846 in preparation of the intended works, and maintained a clear working area in accordance with the subcontract order documentation.

PAGC Ltd Signature : ..... **Date :** 13.04.15

Time of Arrival : 07 : 30 **Waiting Time : Hrs** 0 **Mins** 0

In the event that PAGC Ltd deems that the sub base is unsuitable please contact 07802 742480

Rectified by site ☐ Assist with clearing/delayed start ☐ = hours. Unresolved/unable to work ☐

Customer Signature : ..... **Date :** 13.04.15

Site specific Risk Assessment(s) and Method Statement (RAMS) have been developed, incorporating other identified hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of PAGC.

PLEASE LEAVE AREA BELOW BLANK

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SITE SUPERVISOR CHRIS BALL 13-04-2015

GAS MEMBRANE INSTALLER. (ADAM MCDERMOTT)

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET CASTLEISH	Gas characteristic situation:
Job number: PLOTS 92-94	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOT 92-94
Date: 13-04-2015	Building description: HOUSES
Visit by: PAGEO CONTRACTING	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & CLOUDY.	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX CGR LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE)
1.5	Lapping design	150 MM LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150MM JOINTS & SEALS TO CORNERS, REVEALS & SERVICES (SAGR).
1.7	Service entries seals	ALL SERVICES & ENTRIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 300MM INSPECTED 13-04-2015
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3 Active venting		
3.1	System details	
Additional notes:		

SITE SUPERVISOR CHRIS BALL 13-04-2015.

GAS MEMBANE INSTALLER

(ADAM MCDERMOTT)

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET CASTLEIGH	Gas characteristic situation:
Job number: PLOT 90 & 91	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOT 90 & 91
Date: 13-04-2015	Building description: HOUSES
Visit by: PAGEO CONTRACTING	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & CLOUDY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX CO2 LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE)
1.5	Lapping design	150MM LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150MM JOINTS & SEALS TO CORNERS, REVEALS & SERVICES (SAGR).
1.7	Service entries seals	ALL SERVICES & ENTRIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED.
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 300MM INSPECTED 13-04-2015 CBALL
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3 Active venting		
3.1	System details	
Additional notes:		

1846

PAGeoContracting

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : HOUSING

CUSTOMER : DR GROUNDWORKS

START DATE : 25/5/2015 END DATE :

AREA/PLOT Nos. COMPLETED : 47,48 107-110

(State if work was **perimeter** or **infill** or state **gridlines**)

CARRIED OUT COMPLETE CO^2 LINE OUT TO PLOTS SEALING PIPES & CORNERS USING SAGR

PENETRATION QUANTITES

Pipes less than 130mm	23	Lift pits wrapped	
Pipes more than 130mm		Manhole lids sealed	
Ducts (state size)		Piles	
Steel columns		Corners	
Windposts / Doorbars		Drainage hangers (self adhesive)	
Periscope vents		Self adhesive to concrete etc	
Starter bars		P.S. Hooks	
Battening lin m			

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) RICK GRADY

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) L. BAER

SIGNATURE Chris Baer

DISTRIBUTION : **WHITE COPY** – Left at site with site agent **YELLOW & PINK COPY** – Retained & returned to PAG office

SITE SUPERVISOR :- CHRIS BARR CHRBARR
INSTALLATION SUPERVISOR RICK GRAY

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOT 47 & 48	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOTS 47 & 48
Date: 25/06/15	Building description: HOUSES
Visit by: PAGED CONTRACTING	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & SUNNY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX C08 LOW PERMEABILITY GAS BARRIER GREEN TOP, BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDERS.
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150mm JOINTS & SEALS TO CORNERS & REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICES & ENTRIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED.
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 300mm INSPECTED CHRBARR 24-06-15
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NONE
3 Active venting		
3.1	System details	
Additional notes:		

SITE SUPERVISOR :- CHRIS BARR C.E.Barr
INSTALLATION SUPERVISOR :- RICK GRADY

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOTS 107 & 108	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOTS 107 & 108
Date: 25/06/15	Building description: HOUSES
Visit by: PAGEO CONTRACTING	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & SUNNY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX C02 LOW PERMEABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDER'S
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150MM JOINTS & SEALS TO CORNER'S, REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICES & ENTRIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 300MM INSPECTED 24/06/15 C.E.Barr
2.2	External wall airbricks	
2.3	Internal sleeper walls	ONE INTERNAL SLEEPER WALL TO EACH PLOT VENTILATION BRICKS ARE CONSTRUCTED IN THE WALL
2.4	External vent trenches/ducts	NONE
3 Active venting		
3.1	System details	
Additional notes:		

1847

PAGeoContracting

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : Housing

CUSTOMER : DR Groundworks

START DATE : 1/7/15 END DATE :

AREA/PLOT Nos. COMPLETED : 68 - 79

(State if work was **perimeter** or **infill** or state **gridlines**)

CARRIED OUT COMPLETE LINE OUT TO PLOTS USING CO2 MEMBRANE. SEALING CORNERS & PIPES USING SACR

PENETRATION QUANTITES

Pipes less than 130mm	28	Lift pits wrapped	
Pipes more than 130mm		Manhole lids sealed	
Ducts (state size)		Piles	
Steel columns		Corners	36
Windposts / Doorbars		Drainage hangers (self adhesive)	
Periscope vents		Self adhesive to concrete etc	
Starter bars		P.S. Hooks	
Battening lin m			

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) Rick Grady

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) Chris Bond

SIGNATURE

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PAGeoContracting

1278

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : Housing

CUSTOMER : DR Groundworks LTD

START DATE : 2.7.15 END DATE : 2.7.15

AREA/PLOT Nos. COMPLETED :

(State if work was **perimeter** or **infill** or state **gridlines**)

Full Linbrout using COR membrane sealing all pipes & corners using SIKA.

PENETRATION QUANTITES

Pipes less than 130mm 16	Lift pits wrapped
Pipes more than 130mm	Manhole lids sealed
Ducts (state size)	Piles
Steel columns	Corners 36
Windposts / Doorbars	Drainage hangers (self adhesive)
Periscope vents	Self adhesive to concrete etc
Starter bars	P.S. Hooks
Battening lin m	

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) Adam McDermott

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) Chris Barr

SIGNATURE

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Corby, Northants, NN17 5JG

FAIR PAYMENT Campaign

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Register in England and Wales No. 7088853 Registered office as above.

Site & Sub Grade Acceptance

PAGeoContracting

Project No : 4558 **Project Name :** TAYLOR WIMPEY

Contractor : D R GROUNDWORKS **Project address :** CASTLEIGH

Installation Operative(s): ADAM & PHIL

PAGC Ltd hereby acknowledge that the above contractor has fulfilled their obligations in respect of clearing of debris and waste product as expected under NOS QUN 846 in preparation of the intended works, and maintained a clear working area in accordance with the subcontract order documentation.

PAGC Ltd Signature : ..... **Date :** 2/7/15

Time of Arrival : 7 : 00 **Waiting Time : Hrs** 0 **Mins** 0

In the event that PAGC Ltd deems that the sub base is unsuitable please contact 07802 742480

Rectified by site ☐ Assist with clearing/delayed start ☐ = hours. Unresolved/unable to work ☐

Customer Signature : ..... **Date :** 2/7/15

CHRIS BOE

Site specific Risk Assessment(s) and Method Statement (RAMS) have been developed, incorporating other identified hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of PAGC.

PLEASE LEAVE AREA BELOW BLANK

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1823

PAGeoContracting

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : HOUSING

CUSTOMER : D R GROUNDWORKS

START DATE : ..... END DATE : .....

AREA/PLOT Nos. COMPLETED : 81(JOG) 82 83 84 95 (GARAGE 97-98)
GARAGE

(State if work was **perimeter** or **infill** or state **gridlines**)

CARRIED OUT COMPLETE CO^2 BARRIER LINE OUT TO PLOTS SEALING CORNERS & PIPES USING SAGR.

PENETRATION QUANTITES

Pipes less than 130mm	26	Lift pits wrapped	
Pipes more than 130mm		Manhole lids sealed	
Ducts (state size)		Piles	
Steel columns		Corners	36
Windposts / Doorbars		Drainage hangers (self adhesive)	
Periscope vents		Self adhesive to concrete etc	
Starter bars		P.S. Hooks	
Battening lin m			

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) RICK GRADY

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) CHRIS BAGG

SIGNATURE

DISTRIBUTION : **WHITE COPY** – Left at site with site agent **YELLOW & PINK COPY** – Retained & returned to PAG office

SITE SUPERVISOR : CHRIS BARR C.BARR 23-03-2015 -
INSTALLATION SUPERVISOR RICK GRADY ~~RG~~ 23/3/15

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOT 81	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOT 81
Date: 23-03-2015	Building description:- FLAT ABOVE GARAGE
Visit by:	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & CLOUDY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1	***Gas membrane***	
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX CO2 LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE)
1.5	Lapping design	150mm LAPS WELDED USING HAND &
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150mm JOINTS & SEALS TO CORNERS, REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICE ENTRIES ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED
2	***Passive venting***	
2.1	Sub-floor void	OPEN VOID 300mm INSPECTED 19-03-2015 C.BARR
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3	***Active venting***	
3.1	System details	NATURAL VENT USING TELESCOPIC VENT 450mm FROM CORNERS & EVERY 1.8m WHERE APPLICABLE
Additional notes:		

SITE SUPERVISOR: CHRIS BARR C Barr 23-03-2015.

INSTALLATION SUPERVISOR RICK GRADY ~~AAA~~ 23-3-15

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOT 95	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOT 95
Date: 23-03-2015	Building description: HOUSE & GARAGE
Visit by:	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR.
Weather at time of inspection: DRY & CLOUDY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1	*Gas membrane*	
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION: CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX C02 LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE)
1.5	Lapping design	150MM LAPS WELDED USING HAND & EXTRUSION WELDER.
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150MM JOINT & SEALS TO CORNERS REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICES ENTRIES ARE SEALED WITH S.A.G.R. & WELL CONSTRUCTED
2	*Passive venting*	
2.1	Sub-floor void	OPEN VOID 300MM INSPECTED 19-03-2015 C Barr
2.2	External wall airbricks	2@ SIDE ELEVATION & 3@ FRONT ELEVATION
2.3	Internal sleeper walls	2 INTERNAL SLEEPER WALL TO TAKE FLOOR BEAMS BOTH WALLS ARE WELL VENTED C Barr
2.4	External vent trenches/ducts	NOT USED
3	*Active venting*	
3.1	System details	NATURAL VENT USING TELESCOPIC VENTS 450MM FROM CORNERS & EVERY 1.8M. WHERE APPLICABLE
Additional notes: 2.3 VENTED USING PERFORATED ENGINEERING BRICKS ON EDGE EVERY 1.2M.		

INSTALLATION SUPERVISOR RICK GRADY [illegible] 23/3/15

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: GARAGE 97	Type of development and building/block checked: (residential/ commercial/other) GARAGE 97
Date: 23-03-2015	Building description: GARAGE
Visit by: PAGED CONTRACTING	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & SUNNY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER BLOCK & BEAM CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX CO2 LOW PERMEABILITY GAS. BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE)
1.5	Lapping design	150MM LAPS WELDED USING HAND & EXTRUSION WELDER.
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150MM JOINT & SEALS TO CORNERS, REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICES & ENTRIES ARE SEALED WITH SAGR & WELL CONSTRUCTED
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 225MM INSPECTED 23-03-2015 CURBACK
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3 Active venting		
3.1	System details	
Additional notes:		

INSTALLATION SUPERVISOR RICK GEARY RG 23/3/15

SITE SUPERVISOR CHRIS BALL CBall 23-03-2015

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOTS 82 - 84	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOTS 82-84
Date: 23-03-2015	Building description: HOUSE.
Visit by: PAGEO CONTRACTING	Foundation type: (suspended floor/raft/other) SUSPENDED FLOOR
Weather at time of inspection: DRY & SUNNY	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS OR STRESS POINTS
1.2	Gas membrane type	MONAFLEX CO2 LOW PERMEABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE)
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150mm JOINTS & SEALS TO CORNERS, REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICES & ENTERIES ARE SEALED WITH SAGR & APE WELL CONSTRUCTED
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 300mm INSPECTED 20-03-2015 CBall
2.2	External wall airbricks	
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3 Active venting		
3.1	System details	
Additional notes:		

PAGeoContracting

1278

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : Housing

CUSTOMER : DK Groundworks LTD

START DATE : 2.7.15 END DATE : 2.7.15

AREA/PLOT Nos. COMPLETED : 54 56 57

(State if work was **perimeter** or **infill** or state **gridlines**)

Full Linkout using cot membrane

Sealing all pipes & corners using

spacer.

PENETRATION QUANTITES

Pipes less than 130mm	18	Lift pits wrapped	
Pipes more than 130mm		Manhole lids sealed	
Ducts (state size)		Piles	
Steel columns		Corners	36
Windposts / Doorbars		Drainage hangers (self adhesive)	
Periscope vents		Self adhesive to concrete etc	
Starter bars		P.S. Hooks	
Battening lin m			

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) Adam Warwick

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) Chris Bond

SIGNATURE

DISTRIBUTION : **WHITE COPY** – Left at site with site agent **YELLOW & PINK COPY** – Retained & returned to PAG office

PAGeoContracting

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : TAYLOR WIMPEY MILL STREET EASTLEIGH

CUSTOMER : DR Ground works

START DATE : 27/7/15 END DATE : 27/7/15

AREA/PLOT Nos. COMPLETED : ~~Plots~~ PLOT 55

(State if work was **perimeter** or **infill** or state **gridlines**)

INSTALLED CONCRETE INFILL USING CO-MEMBRANE SEALING PIPES + DUCTS USING SIKA

PENETRATION QUANTITES

Pipes less than 130mm 5	Lift pits wrapped
Pipes more than 130mm	Manhole lids sealed
Ducts (state size)	Piles
Steel columns	Corners 4
Windposts / Doorbars	Drainage hangers (self adhesive)
Periscope vents	Self adhesive to concrete etc
Starter bars	P.S. Hooks
Battening lin m	

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) MATT BLUE

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) CHRIS BALL

SIGNATURE

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SITE SUPERVISOR : CHRIS BARR
INSTALLATION SUPERVISOR :- ADAM MCDERMOTT

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: PLOT 54 - 57.	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOTS 54 - 57.
Date: -	Building description: HOUSES
Visit by:	Foundation type: (suspended floor/raft/other) STRIP FOUNDATION SUSPENDED FLOOR
Weather at time of inspection: OVERCAST	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS
1.2	Gas membrane type	MONAFLEX LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD- MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE BARRIER
1.5	Lapping design	150MM LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150MM JOINTS & SEALS TO CORNERS, REVEALS & SERVICES SAGR
1.7	Service entries seals	ALL SERVICES ENTERING ARE SEALED WITH SAGR & ARE WELL CONSTRUCTED.
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 400MM INSPECTED C. BARR
2.2	External wall airbricks	~~ARE~~ AIRBRICKS ARE IN PLACE
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3 Active venting		
3.1	System details	NATURAL VENT USING TELESCOPIC VENTS 450MM FROM CORNERS & EVERY 1.8M.
Additional notes:		

PAGeoContracting

1790

16 MAR 2015

Rick & Adam x 1

HAND OVER / SIGN OFF

PROJECT NO : 4558

PROJECT : HOUSING

CUSTOMER : D R GROUNDWORKS LTD

START DATE : 9.3.15 END DATE : 9.3.15

AREA/PLOT Nos. COMPLETED : PLOTS 96-99 NO GARAGE

(State if work was **perimeter** or **infill** or state **gridlines**)

FOIL CIWEOUT O/WK CO² MEMBRANE SEALING -
ALL PIPES & CORNERS USING SAGA.
NO GARAGE DOE TO NOT BEING READY

PENETRATION QUANTITES

Pipes less than 130mm 25	Lift pits wrapped
Pipes more than 130mm	Manhole lids sealed
Ducts (state size)	Piles
Steel columns	Corners 48
Windposts / Doorbars	Drainage hangers (self adhesive)
Periscope vents	Self adhesive to concrete etc
Starter bars	P.S. Hooks
Battening lin m	

We confirm that we have inspected the works carried out by PAGeoContracting Ltd and are satisfied that the condition and scope of the works ordered has been executed in accordance with our sub-contract order and specification.

PAGEOCONTRACTING INSTALLER (PRINT NAME) ADAM MCDONALD

SIGNATURE

CUSTOMER'S SITE AGENT (PRINT NAME) CHRIS BAGGE

SIGNATURE

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CHAS Accredited Contractor

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG

FAIR PAYMENT

Tel: 01536 740040 Fax: 01536 740044 e-mail: office@pageo.co.uk web: www.pageo.co.uk

SITE SUPERVISOR :- CHRIS BARR
INSTALLATION ENGINEER :- ADAM McDERMOTT

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: 95 & 96.	Type of development and building/block checked: (residential/ commercial/other) RESIDENTIAL PLOTS 95 & 96
Date:	Building description: HOUSES
Visit by: PAGED CONTRACTING	Foundation type: (suspended floor/raft/other) STRIP FOUNDATION SUSPENDED FLOOR.
Weather at time of inspection: WET & DRY LATER	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS
1.2	Gas membrane type	MONAFLEX CQA LOW PERMABILITY GAS BARRIER GREEN TOP BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SASR (SELF ADHESIVE GAS RESISTANCE MEMBRANE.
1.5	Lapping design	150mm LAPS WELDED USING HAND & EXTRUSION WELDER.
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150mm JOINTS & SEALS TO CORNERS REVEALS & SERVICES (SASR.)
1.7	Service entries seals	ALL SERVICE ENTERIES ARE SEALED WITH SASR & ARE WELL CONSTRUCTED.
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 350/450 mm INSPECTED
2.2	External wall airbricks	AIR BRICKS ARE IN PLACE
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED.
3 Active venting		
3.1	System details	NATURAL VENTILATING TELESCOPIC VENTS 450mm FROM CORNERS & EVERY 1.8 m.

Additional notes:

SITE SUPERVISOR :- CHRIS BARR CBarr
INSTALLATION ENGINEER. ADAM McDERMOTT
A McDermott

A5 Verification pro formas and worked examples

VISUAL INSPECTION OF GAS PROTECTION MEASURES

Site name: MILL STREET EASTLEIGH	Gas characteristic situation:
Job number: 97 – 99	Type of development and building/block checked: (residential/commercial/other) RESIDENTIAL PLOTS 97-99.
Date:	Building description: HOUSES.
Visit by: PAGED CONTRACTING	Foundation type: (suspended floor/raft/other) STRIP FOUNDATION SUSPENDED FLOOR.
Weather at time of inspection:	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition of sub-grade and underside of gas membrane	GAS MEMBRANE PLACED OVER INSULATION CLEAN WITH NO DEBRIS
1.2	Gas membrane type	MONAFLEX CQP LOW PERMABILITY GAS BARRIER GREEN TO BLACK UNDERSIDE
1.3	Gas membrane condition	VERY GOOD MINIMAL TRAFFIC MARKS
1.4	Joining tape product	SAGR (SELF ADHESIVE GAS RESISTANCE MEMBRANE.
1.5	Lapping design	150 mm LAPS WELDED USING HAND & EXTRUSION WELDER
1.6	Laps, welds and joints seals	WELDED LAPS MIN 150 mm JOINTS & SEALS TO CORNERS REVEALS & SERVICES (SAGR)
1.7	Service entries seals	ALL SERVICES ENTERIES ARE SEALED. WITH SAGR. & ARE WELL CONSTRUCTED.
2 Passive venting		
2.1	Sub-floor void	OPEN VOID 400mm INSPECTED CBarr
2.2	External wall airbricks	AIR BRICKS ARE IN PLACE.
2.3	Internal sleeper walls	NONE
2.4	External vent trenches/ducts	NOT USED
3 Active venting		
3.1	System details	NATURAL VENT USING TELESCOPIC VENTS 450mm FROM CORNERS & EVERY 1.8 m.
Additional notes:		

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 10

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.04.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 11

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

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Date of completion: 29.04.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 12

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.04.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 13

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.04.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 14

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.04.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 15

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.04.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 16

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.04.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 17

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 15.09.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 18

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 15.09.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 19

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 15.09.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 20

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 15.09.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 21

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 05.10.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 22

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 05.10.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 23

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 05.10.2016

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Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 24

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 05.10.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 25

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 05.10.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 26

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.10.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 27

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.10.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 28

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.10.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 29

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.10.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 30

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.10.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 31

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 19.12.2016

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 32

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 19.12.2016

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Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 33

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 19.12.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 34

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 19.12.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 35

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 15.11.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 36

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 15.11.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 37

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 15.11.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 38

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 15.11.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 39

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.11.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 40

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.11.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 41

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.11.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 42

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.11.2016

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 43

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 29.11.2016

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 53

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.07.2015

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 49

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 21.07.2015

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 50

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.07.2015

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01

Plot 51

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.07.2015

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 52

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 14.07.2015

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 55

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 27.07.2015

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plots 58-61

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 21.07.2015

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plots 62-64

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 21.07.2015

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plots 65-67

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 21.07.2015

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plots 68-79

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 01.07.2015

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 80

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 01.07.2015

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Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 100

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 09.02.2017

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 101

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 09.02.2017

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COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 102

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

Description of work element:

'Supply and installation' of Monarflex CO_2/Low Permeability Gas Barrier.

This is to certify that the works described above have been completed in accordance with our specification of works and method statement and that any variations have been agreed and recorded.

Signed 

Name Debbie Duffin

Date of completion: 09.02.2017

PAGeoContracting Ltd. Darwin House, Corby Gate Business Park
Corby, Northants, NN17 5JG
Tel : 01536 740040 Fax : 01536 740044 e-mail : office@PAGEO.co.uk web : www.pageo.co.uk
Registered in England No.708883

COMPLETION CERTIFICATE

Job Name……Mill Street, Eastleigh Job No…...4558/HG/01
Plot 103

Building Reference:

D R Groundworks
Mill Street
Eastleigh
Hampshire
SO50 4HF

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Plot 104

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Plot 105

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