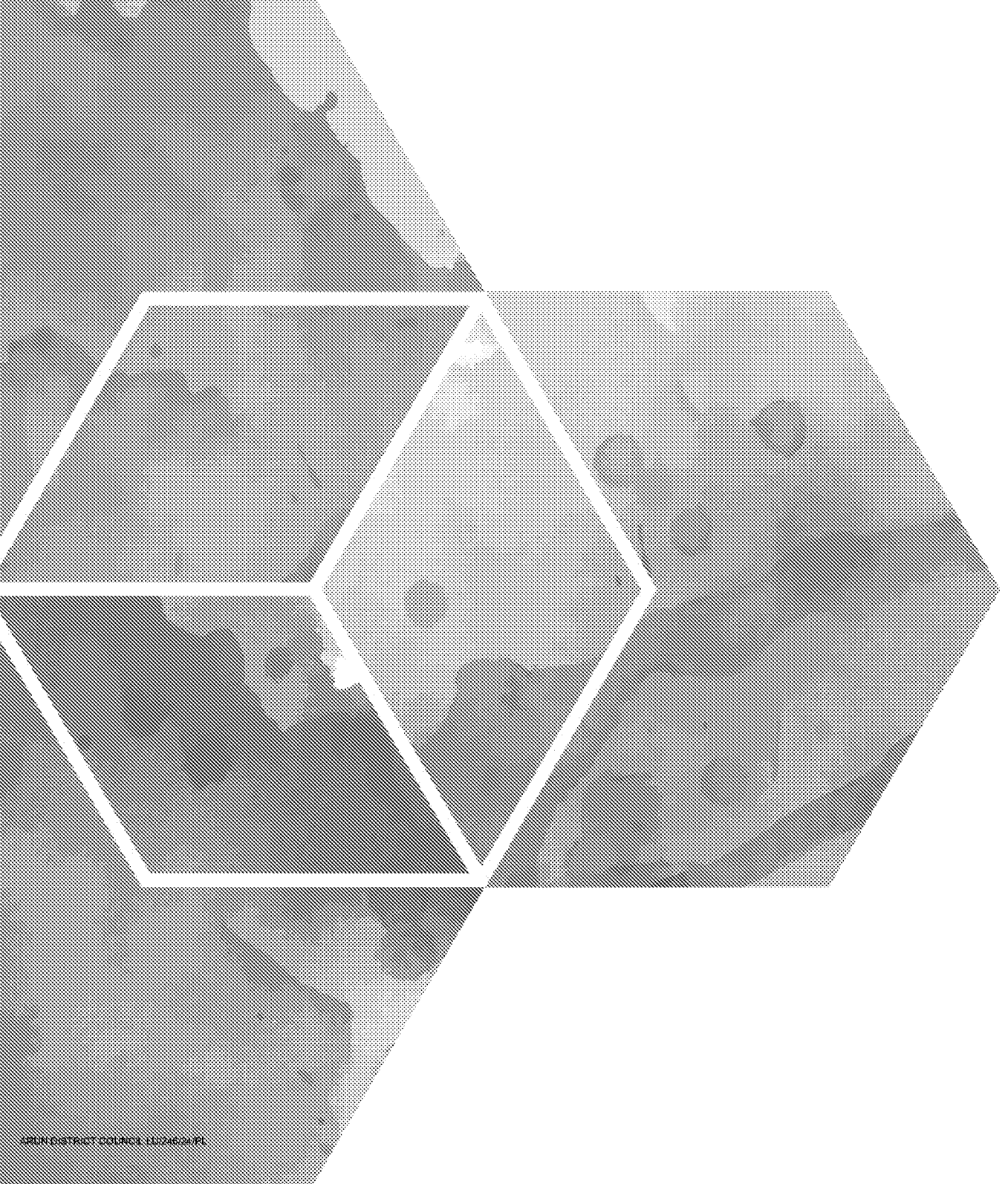

Land Science

LAND AT TODDINGTON LANE, LITTLEHAMPTON, BN17 7PP
REMEDIATION METHOD STATEMENT
BB PROPERTY INVESTMENTS LTD
19TH SPETEMBER 2019

Site:	**LAND AT TODDINGTON LANE, LITTLEHAMPTON, WICK, WEST SUSSEX, BN17 7PP**
Title:	**REMEDIATION METHOD STATEMENT**
Project:	**RESIDENTIAL DEVELOPMENT**
Client:	**BB PROPERTY INVESTMENTS LTD**
Architect:	**FOLKES ARCHITECTS**
Date:	**19TH SEPTEMBER 2019**
Reference:	**LS4342**
Version:	**V1.1**
Prepared by:	[redacted] **SAMUEL WHEWELL M.Sc., B.Sc. (Hons.)** **Engineering Geologist**
Checked by:	[redacted] **MICHAEL ROSE M.Sc., B.Sc., FGS, AIEMA** **Principal Geo-Environmental Consultant**
Authorised by:	[redacted] **ELLIOT TOMS CEnv M.Sc., B.Sc. (Hons.), FGS, MIEnvSci** **Managing Director**

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FIGURES

APPENDICES

1 INTRODUCTION

1.1 General

Land Science was instructed by Folkes Architects on behalf of BB Property Investments Ltd. (the Client) to undertake a Remediation Method Statement in relation to the proposed redevelopment at Land at Toddington Lane, Littlehampton, Wick, West Sussex, BN17 7PP. The location of the site is shown on Figure 1, which is centred at grid reference TQ 0340 0385.

1.2 The Site

The area under investigation comprised a yard currently used for storing scaffolding with a fenced off area including a large two-storey warehouse with asbestos sheets, a temporary office unit, and grassy outskirts between the fence and Toddington Lane.

The layout of the existing site is indicated on Figure 2. It was understood that the Client was in ownership of the site, that this investigation was not a pre-purchase appraisal and that the current scaffolding business have recently left the site.

1.3 Form of Development

The proposed development was understood to comprise the demolition of the current building and the construction of 10no 2 – 4 bed flats and houses, with associated open space, landscaping, parking and access. The proposed development was covered under appeal application APP/C3810/W/18/3197149.

Figure 3 illustrates the layout of the proposed redevelopment. The findings of this report may be not valid if the proposed development is altered.

1.4 Previous Investigations

The following previous investigations relevant to the site were made available:

- Phase I Geo-environmental Assessment, Land Science, LS2711, dated May 2017.
- Phase II Geotechnical and Geo-environmental Assessment, Land Science, LS4160, dated May 2019.

This Remediation Method Statement is based on the findings and recommendations of the above Phase II report.

A Pre-Demolition Asbestos Survey of the existing buildings should be undertaken if an Asbestos Register for the building does not exist. Asbestos containing materials should be identified and removed by a specialist licenced contractor before demolition.

1.5 Scope of Works

Land Science were instructed to carry out a Remediation Method Statement, in relation to removing/reducing any potential risks to any sensitive receptors. It is understood that this report will be used to inform planning conditions with regards to managing contaminated land risks as part of the development.

1.6 Standards

Where practicable, the investigation was undertaken in accordance with the following standards and guidance:

- Model Procedures for the Management of Contaminated Land, DEFRA and Environment Agency, September 2004 ("CLR11").
- Guiding Principles for Land Contamination, Environment Agency, March 2010, ("GPLC").
- National Planning Policy Framework, July 2018.
- Building Regulations Approved Document C: Site preparation and resistance to contaminants and moisture, HM Government, July 2013.
- NHBC Standards Chapter 4.1: Land Quality - Managing Ground Conditions, 2018 edition.

Other technical sources have been cited in respect of specific aspects of the investigation, as referenced throughout the text. If a long delay exists between the investigation and commencement on site, it may be necessary to check whether any standards have changed in the intervening period.

1.7 Conditions and other matters

Reference should be made to the Report Conditions section at the end of this report.

2 REMEDIATION OBJECTIVES AND OPTIONS

2.1 Objectives

The distribution, nature and concentrations of contaminants of concern are a critical consideration for the selection of the correct remedial technology for the attainment of the remediation objectives.

The prevalence of some recalcitrant contaminants may make a specific technology expensive or unviable in terms of treatability and/or cost. The selection of the right remedial technology is further complicated by other considerations such as the geological and hydrogeological setting, extent of previous investigation/remediation works, the time available for implementation and treatment, site access and restrictions posed by ongoing development, and cost.

The primary objective of the remediation activities will be for the safe redevelopment of the site that is suitable for the proposed end-use. Considering the previous sections, the following remedial options available to manage unacceptable risks will either:

- Manage (remove, destroy, modify or immobilise) the source;
- Interrupt the pathway; or
- Modify the receptor or the behaviour of the receptor.

The preferred options will be designed to manage the source of contamination or interrupt the pathway.

Source management may involve the removal, destruction, or transformation of the source. Pathway interruption may involve either the blocking of the pathway or the destruction or removal of contaminants moving along a pathway.

This can be achieved either via the permanent reduction of contaminant concentrations to acceptable limits; source removal; pathway interruption.

2.2 Constraints

There are a number of specific site constraints that affect the choice of the remediation technology, namely:

- Site levels will not be altered.
- No option to re-use material onsite.
- Limited space to treat materials on site.

2.3 Preferred Remediation Options

On the basis of the above the preferred remediation options are as follows:

- Removal of Made Ground from Proposed gardens / landscaped areas and provision of a 'clean' capping system within proposed gardens (600mm thick) and soft landscaping areas (300mm thick). The 'clean' capping should be imported chemically validated topsoil and subsoil.
- Use of barrier pipes for all new potable water supply pipes.
- Class DS-1 and ACEC Class AC-1s for natural soils. The high pH levels found in DS2 were within the Made Ground and should be removed before any construction begins.
- Any soil arisings must not be re-used on site and should be disposed off site.
- Testing of any imported granular material used to raise site levels,
- A discovery Strategy should be followed during the development.

Details of how this should be implemented are provided in section 3.0.

3 IMPLEMENTATION PLAN

The previous Phase II report (LS4160) undertaken by Land Science identified some risks to receptors at the site and the following are recommended: -

- Replacement of the Made Ground within proposed landscaped and private garden areas with chemically compliant topsoil / subsoil.
- Possible upgrading of new water supply pipework.
- Conformation that any imported materials are suitable for use on the site.
- Waste Disposal considerations.
- Considerations recommended for the groundworks phase.

The following strategy has been prepared in order to render the site safe for residential occupation.

3.1 End Users

3.1.1 Private Gardens and Soft Landscaping

Made Ground was encountered within the proposed private garden and soft landscaping areas, this material is considered unsuitable for soft landscaping purposes.

Depending on the final site levels within the proposed gardens / soft landscaping areas, this could be achieved in these areas by either a) raising the site levels by or b) removal of Made Ground to a depth of 600mm (in private gardens) and 300mm (in soft landscaping) and replacement with chemically compliant material.

For the second option the Made Ground should be removed to the required depth (300mm in soft landscaping or 600mm in private gardens) or to the top of the natural soils whichever is shallower. The levels should then be raised by 'clean' imported subsoil and topsoil. Where excavations encounter natural soils within 600mm the soils should be inspected and sampled as part of remedial inspections. Where Made Ground is still present below a depth of 0.60m a geotextile membrane (terram hi-viz or similar) should be placed between the Made Ground and imported soils.

The full removal of Made Ground and the provision of fill material should be monitored and validated by a suitably qualified environmental consultant. This is to include confirmation that the areas have been excavated and filled to the appropriate depth with a chemically suitable class of material.

Material used to backfill the proposed garden and soft landscaped areas must be compliant with test criteria, as detailed in **Appendix A** and in accordance with BS3882:2015 Specification for Topsoil and BS8601:2013 Specification for subsoil and requirements for use.

The soil testing requirements for backfill material is a minimum of three soil tests per source (anti-dig layer; sub-soil; topsoil) and once placed *in-situ* verification testing to confirm depth of fill meets the specified fill depths and chemical suitability at a rate of approximately one sample per 100 sq.m. If the verification tests fail screening criteria then the material is deemed not acceptable and should be removed from site.

3.1.2 Imported Materials

Material used to raise site levels must be suitable for the proposed end use and chemical testing is recommended to confirm that they do not contain elevated concentrations of potential contaminants of concern that could pose a risk to end users (e.g. asbestos).

Testing should meet the screening criteria appended to this document. If *in-situ* verification tests fail screening criteria then the material is deemed not acceptable and should be removed from site.

3.2 Building materials

3.2.1 Below Ground Concrete

Based on BS8005-1:2006, the results of the Sulphate and pH analyses can be summarised as follows: -

- Natural soils – Class DS-1 and as ACEC class AC1s.

High pH levels were found in the Made Ground at DS2 and should be removed prior to construction.

3.2.2 Potable water supply pipework and new service utility routes

Organic contaminants can impact on plastic pipework and the investigation has recorded

significant concentrations of organic contaminants in the form of TPHs.

Confirmation should be sought from the utility supply company as to the suitability of potable water supply pipes prior to the installation.

New service utility trenches should be backfilled with chemically inert material for example naturally sourced sand or pea shingle or material that has been chemically tested and meets the chemical validation specification in Appendix A.

All service utility trenches should be surveyed and an as built drawing of the locations included within the Health and Safety Plan.

3.3 Groundworks Phase

During the construction phase of this project, adequate protection measures for site workers and adjacent properties should be provided within a Construction Method Statement, completed by the Principal Contractor (CDM regulations 2015) for the project, including the site controls provided in Section 5.0

Due to the nature of asbestos in soil the full extent of asbestos distribution cannot be confirmed and suitable precautions must be in place for any works that disturb existing soils for example (but not limited to), new soft landscaped / private garden areas and/or new utility service trenches.

The Control of Asbestos Regulations 2012 (CAR2012) should be referenced prior to undertaking excavations into Made Ground and the required actions implemented onsite. Suitable control measures could involve (but not limited to) toolbox talks to make people aware of potential risks, use of appropriate PPE/RPE and dampening down of the excavations during any exposure, digging and removal of this material to prevent the release of respirable asbestos fibres into the air.

Asbestos containing material poses a potential risk to site workers and adjacent land users if significant quantities are identified and disturbed during the construction phase.

We also note that deep excavations should only be entered where a detailed risk assessment is prepared and any safety measures employed where appropriate, in accordance with confined space regulations and guidance.

The risks to site workers is a safety matter for site management, appropriate controls should be produced by the Contractor to mitigate risks to construction workers. The above recommendations should only be used as a guide.

3.4 Stockpiles and Waste Management

If material is excavated from the ground (e.g. site strip, tree pits and service trenches) it is unlikely to be stockpiled on site, due to the size constraints of the site. If stockpiles are to be created they should be on impermeable ground, over a geotextile membrane and managed suitably to minimise dust generation i.e. dust suppression and suitable covers. Stockpiles must be bunded to prevent possibility of contaminated surface water run-off impacting surrounding land.

Stockpiles of 'waste arising' for offsite disposal and stockpiles of imported 'clean' material granular sub base need to be clearly marked and appropriately segregated to avoid the potential for cross contamination.

Stockpiles should be regularly surveyed and records maintained to be included in the verification report.

The Contractor undertaking the remediation works is responsible for compliance with waste management legislation where issues relating to waste arise as a result of the works. As a minimum, the following is required:

- Management of material that arises during the works and is classified as waste.
- Waste streams are appropriately classified prior to offsite disposal.
- Audit process for the selection of waste management contractors to include the collection and assessment of licences, permits and registrations.

3.4.1 Soil Disposal

The contractor should allow for a suitable regime of testing soil arisings to ensure they are being disposed of to the appropriate facility with the appropriate level of duty of care.

The previous Phase II report produced by Land Science stated the following preliminary waste classification for soils tested at the site: -

- Made Ground at TP3 and DS1 – Inert waste

- Made Ground at DS3 – Non Hazardous (results did not meet the Inert Waste Criteria),
- Made Ground at TP2, TP4, TP5, TP7 – Non Hazardous (no WAC test undertaken),
- Made Ground at TP6, DS2 – Hazardous (no WAC test undertaken).

If found, any soils identified to contain asbestos containing materials (ACMs) are generally classified as Hazardous Waste. Asbestos containing materials will generally be considered to be 'Stable Non-Reactive Hazardous' (SNRH) waste and will therefore need to be disposed of at a Hazardous landfill or a Non-Hazardous landfill which has separate cells to take SNRH waste. However, if the amount of asbestos present as fibres within the soils constitutes less than 0.1% by weight, and there are no visible fragments present, the soils can potentially be classed as non Hazardous for waste disposal, subject to agreement of the receiving facility.

Waste Acceptance Criteria (WAC) analyses should be carried out once soils destined for removal off site as waste have been clearly identified. Liaison with the proposed receiving facility is recommended to be undertaken at an early stage in the scheme to confirm the requirements.

Records of the removal and disposal of soils must be kept and included within the final validation report. The records should include details of volumes, waste codes, facility that the material is sent to and dates etc.

3.5 Discovery Strategy

During groundworks, a watching brief is required by a competent environmental consultant or engineer. Should visual signs or olfactory signs of unexpected contamination be identified then the following is required:

- Stop works in the location of identified gross contamination;
- Inform the Site Manager and Environmental Consultant;
- Environmental consultant to inform Local Planning Authority;
- Excavate the impacted area until impacted material is visually removed;
- The excavated material can be temporarily stockpiled on site, for pre-treatment and waste classification, prior to being disposed of offsite at a suitably licensed facility in accordance with the above (as detailed in Section 4.4).

Unexpected contamination may include:

- Visible fragments of asbestos board / tile or fibre (lagging);
- Soil headspace readings >100 ppm (using photo-ionisation detector [PID]);
- Significant discolouration of the soil;
- Visible hydrocarbon seeps; and,
- Strong hydrocarbon odour.

4 SITE CONTROLS

4.1 General Controls

Site works should be undertaken in accordance with the CDM:2015 Regulations and guidelines prepared by the Health and Safety Executive [HSE, 1991 Protection of Works and the General Public during the Development of Contaminated Land and Guidance Note HS(G)66, Health and Safety Executive, HMSO, 1991].

Detailed control measures with respect to contaminated land will be required during works on the site, to include (but not limited to):

- Monitoring of actual changes to ensure mitigation of potential adverse effects;
- Education of workers to risks associated with contamination (site inductions and appropriate tool box talks);
- Posting of appropriate warning signs;
- Provision of suitable welfare facilities; and
- Provision of suitable PPE (and RPE if required).

4.2 Odours, Noise and Vibration

Care will need to be taken during activities to minimise the impact of any odours, dusts, noise and vibration on the surrounding buildings and receptors. In all instances, best practicable means (BPM) should be employed to control noise and vibration. BPM should also be employed to control dust emissions, such as (but not limited to) damping down dusty operations throughout the earthworks

5 VALIDATION REPORT REQUIREMENTS

There is a requirement that the remediation of the site is validated and documented in line with Environment Agency document: verification of remediation of land contamination report (SC030114/RI).

The Contractor will hold as a minimum:

- Records of all excavations including:
  - Ordnance survey extents and depths
  - Photographic record of each excavation; and
  - Records of inspection records including accurate survey depths and final extents of validation.
- Records of any previously unidentified contamination, as detailed in the Discovery Strategy (if encountered).
- Records and photographic evidence of reduced levels following Made Ground removal from proposed soft landscaping areas and private gardens,
- Records of laboratory analytical and *in-situ* field test results, including:
  - Laboratory test certificate for each verification test of imported material;
  - Particulars of monitoring (date / location / personnel);
  - Confirmation of depths of sub-soil and topsoil layers; and,
  - Chain of custody forms.
- Records of material movement, including:
  - Volumes, origin and placement location of soils references to field results;
  - Details and quantities of excavated and imported materials;
  - Records of earthworks excavations including, as constructed, photographs, quantities of materials and records of progress; and,
  - Waste transfer notes for any material disposed of as waste.
- Waste classification and management documentation, including:
  - Details of all parties involved in the works;
  - Records of approval and method statements;
  - Records of discussions with regulatory authorities and written approval for actions;
  - Records of license applications (including mobile treatment license or declaration under the Definition of Waste Industry Code of Practice); and,
  - Records demonstrating environmental monitoring.

All relevant information as detailed in above shall be collected during the remediation works and an independent verification report complied on completion. The validation report shall take account of the recommendations in CLR11 and comprise as a minimum:

- A summary of the information contained in the risk assessment reports along with the agreed redevelopment strategy and objectives;
- Decision records covering agreement with regulators;
- Records of works undertaken and associated validation and monitoring records e.g. laboratory validation test certificates);
- Details of all parties involved in the works;
- Details and quantities of excavated soils and volumes disposed of off -site;
- Specialist contractor's validation reports for particular elements of work (if used);
- Details of the validation data for imported soils used on-site (at least three sets of analyses per source) plus *in-situ* validation test results confirming depth and chemical quality;
- Records of all earthworks, excavations and sorting including as constructed, photographs, quantities of materials;
- Waste classification and management documentation;
- Additional risks assessments / non-scheduled reactive works relating to previously unidentified contamination and all related remedial works that were undertaken; and,
- Final status of remediation and achievement remedial objectives to satisfy planning conditions.

It should be noted that consideration has not been given to the protection of groundworkers, during the construction phase of this project, as that is outside the scope of this report. Adequate protection measures should be provided within a Construction Method Statement, completed by the Principal Contractor (CDM regulations 2015) for the project.

6 REPORT CONDITIONS

6.1 General

Interpretation of ground conditions inherently depends on the conditions revealed by a limited data set. Land Science takes all reasonable professional care in preparation of this report, using current standards and industry best practice. However, we accept no liability whatsoever expressed or implied in respect of:

- The scope, extent or design of an investigation.
- Any conditions not directly revealed by the investigation.
- Published standards or methodologies used or adopted in this report.
- The opinion of any other party including any regulator, authority or stakeholder.
- Any dispute, claim or consequential loss arising from this report.
- Any matter other than ground conditions.

Land Science does not accept any risk or any direct or consequential liability relating to ground conditions. The client should understand their risks and liabilities and seek further professional advice.

No aspect of this report constitutes a design. Where this information is used in design, the designer should verify that the information has been used appropriately.

No aspect of this report constitutes the supply of Goods.

Our appointment is covered under our Terms and Conditions, agreed and accepted by the Client.

6.2 Confidentiality

This report may only be relied upon by the Client and their design team, and should only be read and used in full. No responsibly will be accepted where this report is used, by any other party, who do so at their peril. The report may not be relied upon or transferred to any other parties without the express written agreement of Land Science.

6.3 Third Party Information

Third party information used in the production of this report has been relied upon as being accurate. Land Science cannot warrant or accept any liability for errors and/or omissions in third party information.

6.4 Regulators and Approvals

It is recommended that this report is submitted to any relevant authorities for their own assessments and to provide their approval or comments accordingly. This should be in good time before commencing on site in case additional work is to be carried out.

Standards, technical guidance and regulatory positions change over time and which may therefore affect the findings and recommendations made in this report. This should be verified by the client prior to any critical contractual points or commencing on site.

6.5 Variations with time

The report relates to conditions revealed at the time of the investigation and any monitoring visits. A number of parameters may vary over time or seasonally. Groundwater levels, ground gas compositions, or concentrations of contaminants are particularly variable in this respect. Further monitoring or verification should be considered as appropriate.

6.6 Other Matters

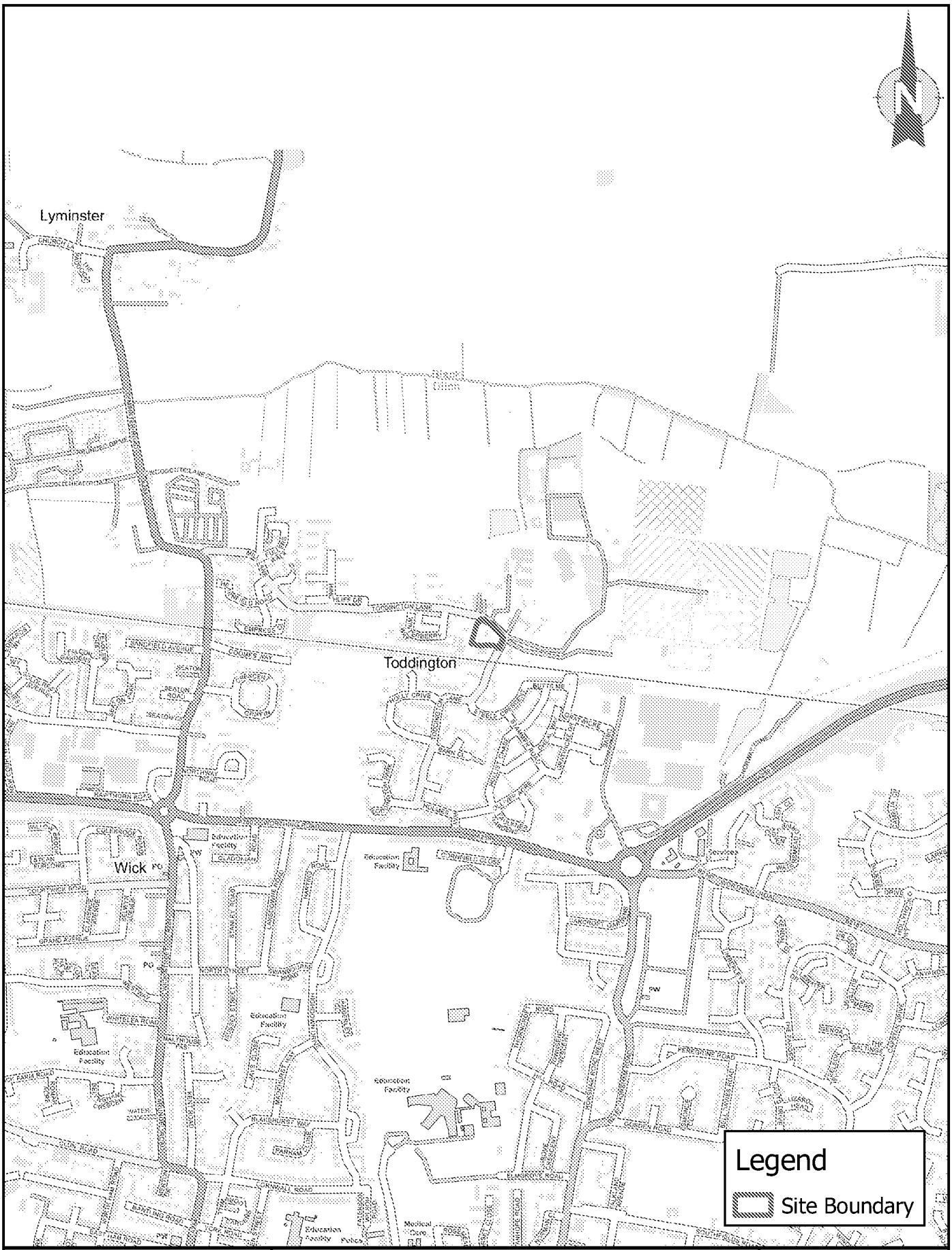
This report makes no representation on other matters such as ecology, agronomy, arboriculture, structural condition, building materials, boundaries and planning etc.

This report and findings may not be valid if the proposals for the site e.g. design of the development (if relevant) are changed. This must be checked.

No aspect of this report should be taken as a guarantee whatsoever that a site is free of pollution, contamination or hazardous materials.

GLOSSARY OF TERMS

ACM	Asbestos Containing Material
BGS	British Geological Survey
BRE	Building Research Establishment
BS	British Standard
CBR	California Bearing Ratio
CDM	Construction Design and Management regulations
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Applications in Real Environments
CLEA	Contaminated Land Exposure Assessment model
CoC	Chemical of Concern
CSM	Conceptual Site Model
EA	Environment Agency
EQS	Environmental Quality Standards
FOC	Fraction of Organic Carbon
GAC	Generic Assessment Criterion
mbgl	Meters Below Ground Level
NHBC	National House Building Council
mod	Metres above Ordnance Datum
PAH's	Polycyclic Aromatic Hydrocarbons
PCoC	Potential Contaminant of Concern
PBET	Physiological Based Extraction Testing
PHE	Public Health England
PID	Photo-Ionisation Detector
PQRA	Preliminary Quantitative Risk Assessment
PSD	Particle Size Distribution Test
RMS	Remediation Method Statement
SGV	Soil Guideline Value
SOM	Soil Organic Matter
SPZ	Source Protection Zone
SPT	Standard Penetration Test
SSSI	Sites of Special Scientific Interest
ST-WEL	Short Term Workplace Exposure Limit
SVOC's	Semi-Volatile Organic Compounds
TPH	Total Petroleum Hydrocarbons
TRRL	Transport Road Research Laboratory
TWA-WEL	Time Weighted Average Workplace Exposure Limit
UK HBF	United Kingdom House Building Federation
VOC's	Volatile Organic Compounds
WAC	Waste Acceptance Criteria



Land Science	Title: Site Location		Reference: LS4342
	Project: Land at Toddington Lane, Littlehampton, BN17 7PP		Figure: 1
	Client: BB Property Investments Ltd.		Date: 19/09/2019
	Prepared by: MB	Checked by: MR	Version: 1	Sheet: 1 of 1

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Land Science	Title: Existing Site Plan	Reference: LS4342	Prepared by: MB
	Project: Land at Toddington Lane, Littlehampton. BN17 7PP	Figure: 2	Checked by: MR
	Client: BB Property Investments Ltd.	Date:19/09/2019	Version: 1.2

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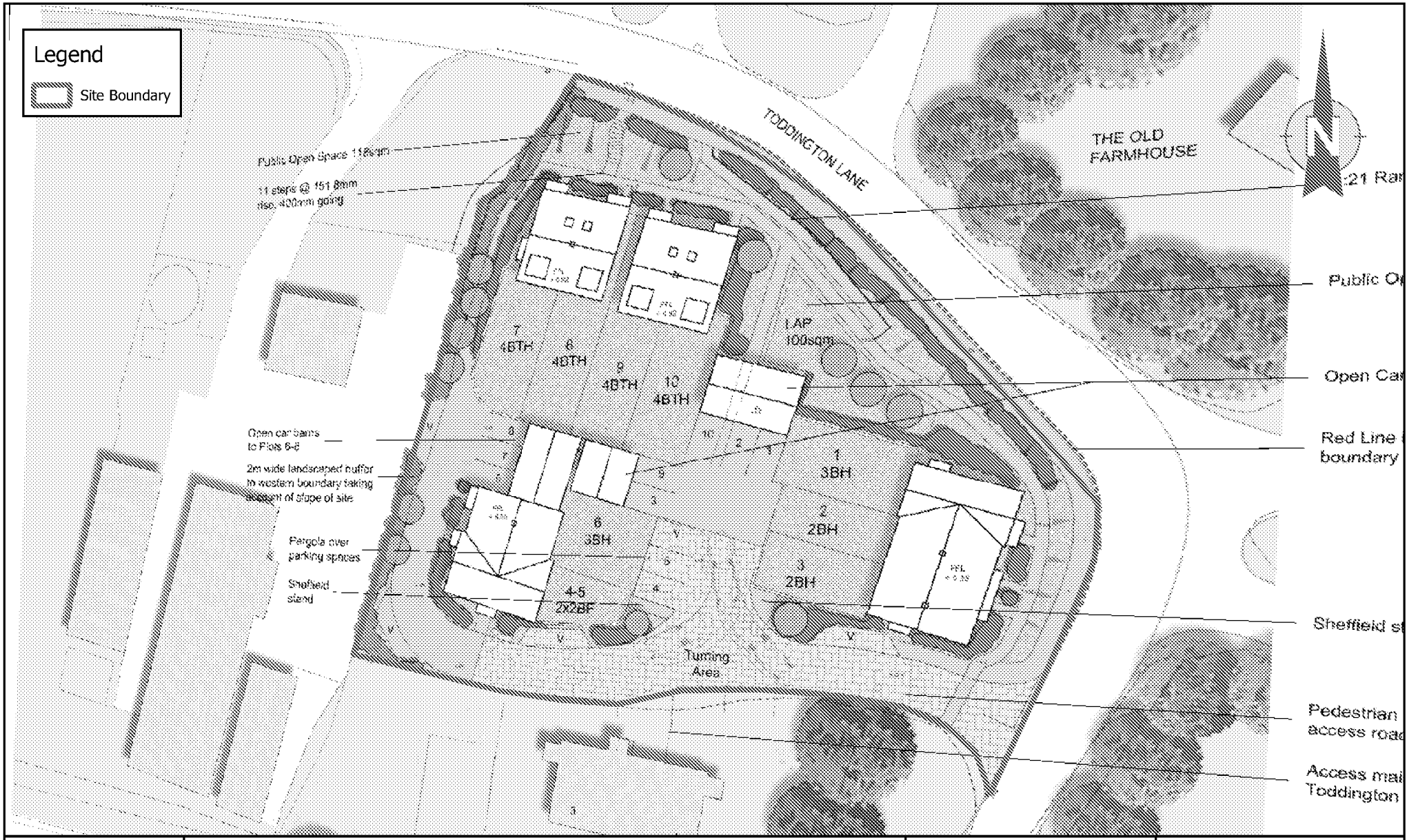

Land Science	Title: Proposed Development Layout	Reference: LS4342	Prepared by: MB
	Project: Land at Toddington Lane, Littlehampton, BN17 7PP	Figure: 3	Checked by: MR
	Client: BB Investments Ltd.	Date: 19/09/2019	Version: 1

APPENDIX A

TIER 1 SOIL SCREENING (HUMAN HEALTH)

Project:	Toddington Lane	**Soil Organic Matter (calculated):**	3.55%	**Lab Sample Ref.**	
Reference:	LS4342	**Soil Organic Matter (adopted):**	2.50%	**Location Ref.**	
Assessor:	SW	**Scenario:**	Residential (with vegetation)	**Depth (m)**	
				Sample Number	
				Date sample taken	
				Time sample taken	

Determinand	Source	Value	Units	Detection Limit
Asbestos (identification)	N/A	Not-detected	Type	N/A
Herbicide and Pesticide Screening	N/A	Absent	P/A	N/A
General Inorganics				
pH	NONE	-	pH Units	N/A
Total Cyanide	NONE	-	mg/kg	1
Water Soluble Sulphate (Soil Equivalent)	No health risk	-	g/l	-
Water Soluble Sulphate as SO_4 (2:1)	No health risk	-	mg/kg	-
Water Soluble Sulphate (2:1 Leachate Equivalent)	No health risk	-	g/l	0.00125
Sulphide	NONE	-	mg/kg	1
Fraction Organic Carbon (FOC)	No health risk	-	N/A	0.001
Total Organic Carbon (TOC)	No health risk	-	%	0.1
Loss on Ignition @ 450oC	NONE	-	%	0.2
Acid Neutralisation Capacity	No health risk	-	+/- mol/kg	-999
Total Phenol				
Total Phenol (monohydric)	S4UL	200	mg/kg	1
Speciated PAHs				
Naphthalene	S4UL	5.6	mg/kg	0.05
Acenaphthylene	S4UL	420	mg/kg	0.05
Acenaphthene	S4UL	510	mg/kg	0.05
Fluorene	S4UL	400	mg/kg	0.05
Phenanthrene	S4UL	220	mg/kg	0.05
Anthracene	S4UL	5400	mg/kg	0.05
Fluoranthene	S4UL	400	mg/kg	0.05
Pyrene	S4UL	1200	mg/kg	0.05
Benzo(a)anthracene	S4UL	11	mg/kg	0.05
Chrysene	S4UL	22	mg/kg	0.05
Benzo(b)fluoranthene	S4UL	3.3	mg/kg	0.05
Benzo(k)fluoranthene	S4UL	93	mg/kg	0.05
Benzo(a)pyrene	S4UL	2.7	mg/kg	0.05
Benzo(a)pyrene (surrogate marker for genotoxic PAHs)	C4SL	5	mg/kg	0.05
Indeno(1,2,3-cd)pyrene	S4UL	36	mg/kg	0.05
Di-benzo(a,h)anthracene	S4UL	0.28	mg/kg	0.05
Benzo(ghi)perylene	S4UL	340	mg/kg	0.05
Coronene	NONE	-	mg/kg	0.05
Total PAHs				
Total WAC-17 PAHs	NONE	-	mg/kg	0.85
Heavy Metals / Metalloids				
Arsenic	S4UL	37	mg/kg	1
Barium	NONE	-	mg/kg	1
Beryllium	S4UL	1.7	mg/kg	0.06
Boron	S4UL	290	mg/kg	0.2
Cadmium	S4UL	11	mg/kg	0.2
Chromium (VI)	S4UL	6	mg/kg	1.2
Chromium (III)	S4UL	910	mg/kg	1
Copper	S4UL	2400	mg/kg	1
Lead	C4SL	200	mg/kg	1
Mercury (elemental)	S4UL	1.2	mg/kg	0.3
Nickel	S4UL	130	mg/kg	1
Selenium	S4UL	250	mg/kg	1
Vanadium	S4UL	410	mg/kg	1
Zinc	S4UL	3700	mg/kg	1
Monoaromatics				
Benzene	S4UL	170	µg/kg	1
Toluene	S4UL	290000	µg/kg	1
Ethylbenzene	S4UL	110000	µg/kg	1
Xylene (p & m) [note - values for p used]	S4UL	130000	µg/kg	1
Xylene (o)	S4UL	140000	µg/kg	1
MTBE (Methyl Tertiary Butyl Ether)	NONE*	1	µg/kg	1
Total BTEX	NONE		µg/kg	10
Petroleum Hydrocarbons				
Mineral Oil (C10 - C40)	NONE	-	mg/kg	10
TPH (C10 - C40)	NONE	-	mg/kg	-
Aliphatic EC 5-6	S4UL	78	mg/kg	0.001
Aliphatic EC >6-8	S4UL	230	mg/kg	0.001
Aliphatic EC >8-10	S4UL	65	mg/kg	0.001
Aliphatic EC >10-12	S4UL	330	mg/kg	1
Aliphatic EC >12-16	S4UL	2400	mg/kg	2
Aliphatic EC >16-35	S4UL	92000	mg/kg	16
Aliphatic EC >35-44	S4UL	92000	mg/kg	-
Aromatic EC 5-7	S4UL	140	mg/kg	0.001
Aromatic EC >7-8	S4UL	290	mg/kg	0.001
Aromatic EC >8-10	S4UL	83	mg/kg	0.001
Aromatic EC >10-12	S4UL	180	mg/kg	1
Aromatic EC >12-16	S4UL	330	mg/kg	2
Aromatic EC >16-21	S4UL	540	mg/kg	10
Aromatic EC >21-35	S4UL	1500	mg/kg	10
Aromatic EC >35-44	S4UL	1500	mg/kg	-
PCBs by GC-MS				
PCB Congener 28	NONE*	0.001	mg/kg	0.001
PCB Congener 52	NONE*	0.001	mg/kg	0.001
PCB Congener 101	NONE*	0.001	mg/kg	0.001
PCB Congener 118	NONE*	0.001	mg/kg	0.001
PCB Congener 138	NONE*	0.001	mg/kg	0.001
PCB Congener 153	NONE*	0.001	mg/kg	0.001
PCB Congener 180	NONE*	0.001	mg/kg	0.001
Total PCBs	NONE*	0.007	mg/kg	0.007