



SITE OFF WILLOW WALK, SPALDING

REMEDIAL METHOD STATEMENT FOR BURMOR CONSTRUCTION LTD

Project No:
GML18246/4/1

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Revision - 0

REMEDIAL METHOD STATEMENT: SITE OFF WILLOW WALK, SPALDING

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1.0 INTRODUCTION

Geo-Matters Ltd have been instructed by Burmor Construction Ltd to prepare a Remedial Method Statement (RMS) for a proposed residential redevelopment at their site off Willow Walk in Spalding. The site is located at Ordnance Survey National Grid Reference 525291, 323049.

1.1 Sources and Conditions

This RMS is based on the findings of the following reports for the site, as listed below:

- Ramboll Whitbybird Ltd – Law’s Yard, Spalding – Environmental Factual & Interpretive Report for Leonard Cheshire (ref. 4926, dated November 2007); and
- Geo-Matters Ltd - Site off Willow Walk, Spalding - Phase I and II Geo-Environmental Investigation for Minster Property Group Ltd (ref. GML18246/1/1, dated December 2018).

The above reports must be read in conjunction with this document, which should not be referred to in isolation.

This RMS has been prepared on the understanding that the site is to be redeveloped for a residential end-use (including private gardens, soft landscaping and associated infrastructure). If the development proposals change then the recommendations in this RMS may require amendment.

This report has been prepared for the sole use and reliance of Burmor Construction Ltd and is presented to propose an outline scope for remedial works, where required.

A proposed development plan (RMS plan) is presented in Appendix I.

All recommendations within this RMS are subject to the formal approval of the Regulatory Authorities (i.e. EHO, EA and NHBC). It is recommended that this report be submitted to them by the Client in advance of any irrecoverable works on site.

A combined set of Tier 1 Screening Values (T1SVs) have been used in consideration of potential risks to future end users at the subject site with

reference to the proposed *residential end-use with private gardens*. These include DEFRA 'Category 4 Screening Levels' (C4SLs) and where these are not available, third party screening values (e.g. LQM, CIEH etc.) that have used DEFRA's general risk assessment approach and methodology to calculate further screening values for additional determinands. Due to ongoing revisions to the contaminated land assessment framework (including the derivation and release of authoritative screening values), the following assessment (and related conclusions / recommendations) may be revised by Geo-Matters Ltd should replacement screening values etc. be released in the near future.

Whilst this report may be utilised by others for reference purposes at the Client's discretion, it has not been prepared for any other purposes (e.g. waste classification etc.) and therefore additional works may be required by third parties dependent upon their own requirements / works. Further such assessments or testing may be required to inform subsequent works which we have not been made aware of or instructed upon at this stage (e.g. removal of soils for disposal etc.).

1.2 General Considerations

The possibility of significant variation in ground conditions existing between sampling locations cannot be discounted although it is considered that the various investigations at the site have characterised the ground conditions appropriately. Any gas / groundwater conditions noted are based on observations made at the time of the investigations and may be subject to significant variation due to seasonal or other effects.

It is assumed that the Client and their selected redevelopment contractors will adhere to all relevant regulations in connection with health and safety and demolition works (including, but not limited to, Construction (Design and Management) Regulations 2015. Whilst this report recommends remedial measures to protect end-users following redevelopment it is not intended to assess all risks during redevelopment works and therefore the management of health and safety issues relating to workers involved in the redevelopment shall remain the responsibility of the Client. Notwithstanding this, parts of this report are written and presented to mitigate risks to various receptors (both on-site and off-site) during redevelopment works (e.g. dust suppression).

1.3 Supervision of Remedial Works

The Client will need to appoint a suitable third-party environmental consultancy (i.e. Geo-Matters Ltd) to supervise and validate any remedial works. However, the appointed remedial / earthworks contractor(s) will be responsible for the provision of suitable and sufficient personnel to undertake and complete the works recommended within this document.

2.0 SUMMARY CONCEPTUAL SITE MODEL

Full details relating to the site setting and ground conditions encountered are presented within the Phase I and Phase II Geo-Environmental Investigation Report (as referenced in Section 1.0). The following sections present a summary conceptual site model as background information to put the proposals presented within this RMS into perspective.

2.1 Background

A review of all available desk study information indicates that the site has supported various small buildings / outbuildings from first available mapping (dated 1888) until it was significantly redeveloped in the mid-1960s to support a carpentry business, glass business, two vehicle repair garages and car body shop which have all recently been demolished.

The surrounding area is recorded to have been progressively developed from open fields to support residential areas with some commercial / light industrial premises.

The superficial geology across the site are recorded as Tidal Flat Deposits, which are recorded as soils comprising soft silty clays with occasional bands of sand, gravel and peat at shallow depths. This broadly corresponds with the findings of the third party and Geo-Matters Ltd investigations (although no peat was encountered within 5.00m begl during the third-party or Geo-Matters Ltd investigations). The underlying solid 'Oxford Clay Formation' has not been encountered within 5.00m depth.

Both the superficial and bedrock geology across the site have the designation of 'Unproductive' aquifer.

Potential ground gas sources were identified within the site's vicinity, including areas of made ground with the third party finding elevated levels of ground gas during their investigation.

2.2 Ground Conditions

2.2.1 Soils – Made Ground / Topsoil

Topsoil was not encountered during the recent intrusive works.

Made ground was encountered by Geo-Matters Ltd across the site to depths of between 0.40m begl (in WS01 in the southern part of the site) and 1.30m begl (in WS04 in the central part of the site). A high degree of variability was noted in the depth of the made ground across the site.

The made ground generally comprised reworked sands, gravels and clays which contained variable proportions of anthropogenic materials including cement, tarmac, glass, clinker and concrete fragments.

These findings broadly correspond with those of the third party although it is noted that there has generally been a slight decrease in the depth of made ground across the site since the third-party investigation, which is likely to be due to the demolition and removal of the buildings / hardstanding formerly on site.

2.2.2 Soils – Natural Strata

Across the site the natural strata beneath the made ground were generally recorded by Geo-Matters Ltd to comprise light brown and occasionally grey mottled fine sands with variable proportions of clay, silt and gravel to depths of between 0.65m below existing ground level (begl) (in WS05) and 2.00m begl (in WS04). These were further underlain by firm light brown and occasionally light grey mottled clays (with variable proportions of silt, sand and gravel) which ranged in thickness between 0.60m (in WS06) and 1.80m (in WS03).

Where fully penetrated, the light brown and grey mottled clays were further underlain by light brown and occasionally grey mottled fine sands (with variable proportions of clay, silt and gravel), from depths of between 2.00m begl (in WS07) and 3.00m begl (in WS04).

These findings broadly correspond with those of the third party report and the strata are considered representative of the underlying superficial Tidal Flat Deposits.

2.2.3 Groundwater

Groundwater was encountered from an average depth of 2.38m begl within all of the window sampler boreholes undertaken across the site during the recent Geo-Matters Ltd investigation. The groundwater was recorded from depths of between 1.89m begl (in WS01 in the southern part of the site) and 2.74m begl in WS02 (in the central part of the site).

As part of the Geo-Matters Ltd, three boreholes were completed as ground gas / groundwater level monitoring wells (WS01, WS03 and WS06). Groundwater was encountered in these at depths of between 1.78m begl (in WS01) and 2.28m begl (in WS03) during our recent monitoring visits.

These findings broadly correspond with those of the third-party report.

2.2 Sources (Contamination)

Soil Contamination

The site is recorded to have supported support a carpentry business, glass business, two vehicle repair garages and car body shop which have all been demolished. The main potential source of contamination at the site was therefore considered to be the presence of made ground, as well as historic tanks (which have been removed during demolition works) and the contamination hotspots encountered by the third party during their investigation.

The intrusive site investigation therefore concentrated on targeting areas of potential made ground whilst achieving reasonable site coverage with the exploratory holes.

Soil samples were analysed for heavy metals, polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH) and asbestos during the Phase II investigation undertaken by Geo-Matters Ltd. The following exceedances of the Tier 1 Screening Values (T1SVs) were encountered (see overleaf);

- WS01 @ 0.60m (natural sand) - Benzo(b)fluoranthene, Benzo(a)pyrene, Dibenz(a,h)anthracene;
- WS03 @ 0.15m (made ground gravel) - TPH C₁₀ – C₂₅, TPH C₂₅ – C₄₀;
- WS03 @ 0.80m (made ground gravel) - Dibenz(a,h)anthracene;
- WS06 @ 0.25m (made ground gravel) - Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(a)pyrene, Dibenz(a,h)anthracene;
- WS06 @ 1.70m (natural clay) - TPH-CWG Aromatic >EC₁₂ - EC₁₆, Dibenz(a,h)anthracene;
- WS07 @ 0.50m (made ground clay) - Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene, Dibenz(a,h)anthracene, Lead;
- WS08 @ 1.10m (made ground gravel) - TPH C₁₀ – C₂₅; and
- HTP02 @ 0.00m – 0.20m (made ground gravel) – Chrysotile (asbestos), Benzo(b)fluoranthene, Benzo(a)pyrene, lead.

The exceedances listed above indicate that the majority of exceedances were within made ground (with the exception of natural soils around WS01 at 0.60m begl and WS06 at 1.70m begl).

However, the made ground across the site is considered contaminated based on the proposed residential development due to the number of elevated concentrations the range and depth of exceedances, and the variability of the made ground in terms of composition and therefore likely contaminants / contaminant distribution.

This broadly correlates with the findings of the previous ground investigation works in relation to their identified hotspots, and it is considered highly likely that the recent demolition works are likely to have 'disturbed' the near-surface contamination. This may have included the dispersal, 'dilution' or other degradation of some of the contaminants which were identified within the previous third-party report. On this basis, the most recent ground investigation works (undertaken by ourselves and which targeted the previously identified hotspots of contamination) are considered to reflect the current site conditions.

The made ground and localised natural soils around WS01 at 0.60m begl and WS06 at 1.70m begl should therefore be treated as contaminated in the context of the proposed re-development of the site for a residential land-use with private gardens. Remedial works will therefore be necessary to break the identified pollutant linkages in this area. This applies should the materials remain *in situ* and

be present at shallow depths within garden / soft landscaped areas subject to Regulatory Authority approval.

Validation works will be required in any areas where soils are excavated to confirm the extent of impacted soils. Where further contaminated soils are encountered then the excavations should be suitably extended until all significantly impacted materials are removed.

Ground Gas and Radon

The third party encountered elevated concentrations of carbon dioxide during their 1 no. ground gas monitoring visit (with all methane concentrations recorded below 1.0%, and carbon dioxide concentrations recorded between 0.0% and 9.1%).

Because of these findings an initial ground gas monitoring programme (3 no. weeks) was completed by Geo-Matters Ltd which did not find any significant concentrations of ground gas and therefore re-classified the site as Characteristic Situation 1 or NHBC 'Green', where specific gas protection measures would not be required within new buildings constructed at the site, subject to Local Authority / NHBC approval.

The elevated concentrations of carbon dioxide recorded by the third party were not recorded by Geo-Matters during the recent monitoring works. Therefore, it is considered likely that the partial removal of the previously existing made ground during demolition (alongside a probable and associated natural attenuation / reduction in contaminant concentrations) may have changed the ground gas generation potential beneath the site.

The Phase I Desk Study indicated that the site is recorded to be within an area where radon protective measures are **not** necessary for new properties, subject to regulatory authority and NHBC approval.

2.3 Receptors

The site is to be redeveloped for a residential end use. Therefore, Tier 1 Screening Values (T1SVs) for a residential end use with plant uptake were used in the Phase II assessment as these are the most stringent scenario with regards to contaminant screening values. The main receptors which have been considered within this RMS comprise future residential end users. Should the development proposals alter (e.g. layout, type or foundation option), then the recommendations in this report may be subject to change.

The site is mapped as being underlain by Tidal Flat Deposits and is further underlain by the Oxford Clay Formation which are both identified as 'Unproductive' aquifers, the site is therefore not located in a Groundwater Source Protection Zone. Additionally, other than the historical on-site groundwater abstraction borehole there are no other recorded groundwater abstraction boreholes (including for potable water) within 1km of the site. The closest natural watercourse relates to the River Welland 37m west of the site.

The concentrations of the contaminants detected within soil samples analysed to date are considered to pose a low risk to controlled waters. In addition, no significant widespread free-phase contamination has been identified at the site at this stage. In view of this significant feasible risks to controlled waters have **not** been identified at this stage. Whilst the previous reports for the site indicated potential risks it is considered most likely that significant natural attenuation of any previously existing contaminants (e.g. dilution, dispersion, degradation) is likely to have occurred post-demolition once infiltration from rainfall etc. percolated through the site. This shall be re-assessed should the above description of the site's setting and contamination status change significantly.

Groundworkers have **not** been considered as receptors within this document as it is anticipated that the company / companies undertaking such works will implement their own health and safety protocols with due reference to the findings contained within this report and those listed herein and shall therefore not be considered any further within this assessment.

2.4 Source / Pathway / Receptor Linkage

Based on the findings of our previous reports, it is considered that potential pollutant linkages may be present associated with the contamination in the made ground and the localised contamination in natural soils.

The main pathways which have been identified include the following:

- Direct ingestion of soil and dust;
- Ingestion of home-grown vegetables etc.;
- Dermal contact with soil and dust; and
- Inhalation of vapour, fibres and dust.

Remedial works are therefore required to break the identified linkages, including the delineation and removal of impacted soils should they remain *in situ* and be present at shallow depths within garden / soft landscaped areas

3.0 REMEDIATION STATEMENT

3.1 Remediation Rationale

It is considered that the remedial works outlined herein should be sufficient to break all identified pollutant linkages to human health receptors.

3.1.1 Soil Contamination in Made Ground and in Natural Soils in WS01 and WS06

The works undertaken at the site to date have identified site-wide issues relating to soil contamination in made ground relating to elevated PAHs, heavy metals, asbestos and TPH, as well as localised exceedances in natural soils around WS01 at 0.60m begl and WS06 at 1.70m begl.

It is recommended that any asbestos containing materials are handpicked by suitably qualified staff under controlled conditions prior to commencing further redevelopment. All movements of asbestos contaminated made ground materials will need to be **undertaken under controlled conditions** (as explained in subsequent sections).

It is considered that the made ground across the site and the natural soils around WS01 and WS06 should be treated as contaminated in the context of the proposed re-development of the site for a residential land-use with private gardens. Remedial works will therefore be necessary to break the identified pollutant linkages. This only applies **should such material(s) remain *in situ* and be present at shallow depths within garden landscaped areas** subject to Regulatory Authority approval.

An RMS Plan (Drawing 004) is enclosed in Appendix I and highlights the areas requiring remediation at the site.

At this stage it is recommended that one of the following options should be considered (depending upon the Client's requirements, positioning of proposed layouts etc):

- If contaminated soils are left *in situ* in proposed private garden areas, then they should be capped with 600mm of either 'clean' site-won or 'clean' imported soils;
- If contaminated soils are removed from proposed private garden areas, then they should be replaced with a suitable thickness of either 'clean' site won or imported soils; and

- Should the contaminated soils be within an area of proposed hardstanding (e.g. beneath the floor slab of the proposed residential housing and / or roads) then this is considered sufficient to break the previously identified pollutant linkage (although it is recommended that TPH impacted soils are not retained at shallow depth beneath floor slabs etc.), subject to regulatory authority / NHBC approval.

All excavation / removal works will need to be undertaken under controlled conditions

The specification and methodology for the selection, assessment and importation of capping soils is addressed in detail within Section 4.0. These steps are considered suitable to fully break the pollutant linkages as identified above. The specification and methodology for the selection, assessment and importation of such soils is addressed in detail within Section 4.0.

3.1.2 Ground Gas

The site does **not** lie in an area requiring radon precautions in accordance with the Site-Specific Environmental Data Report (presented previously).

Recent ground gas monitoring completed by Geo-Matters Ltd has confirmed the absence of significant concentrations of ground gas and therefore gas protection measures are **not** considered necessary for new structures at this stage, subject to regulatory approval.

3.1.3 Other Contamination / Related Issues

Additional / previously unidentified contamination should be dealt with on an *ad hoc* basis as outlined in Section 4.0.

Topsoil was absent from the site, and there will therefore be a need to import suitable topsoil / subsoil onto site for aesthetic cover / use in the soil capping layer to private gardens and soft landscaping, and it is reiterated that any such works must be undertaken in full compliance with all regulatory licensing procedures, and validation of the soils prior to importation will be required, subject to the approval of the Local Authority. **All movement(s) of soils and other arisings (on / off site and within the site itself) must be undertaken under the appropriate regulatory authority licensing / exemption procedures.**

4.0 REMEDIATION SPECIFICATION

4.1 Capping Specification

As outlined in Sections 2.0 and 3.0, feasible pollutant linkages have been identified associated with made ground across the site, and the natural soils around WS01 and WS06.

Remedial measures are required at the subject site in order to break the identified pollutant linkages. If contaminated materials remain in situ and at shallow depths within gardens / soft landscaping then the capping of such areas with 600mm suitable material (topsoil / subsoil) is considered to be an appropriate approach to break the related pollutant linkages. Where such ground / soils are covered by structures / permanent hardstanding etc, then further remedial works should not be necessary.

Alternatively, in instances where all contaminated ground is removed (e.g. for off-site disposal or for placement beneath structures / hardstanding or placement beneath areas of public open space etc.), then capping would **not** be required, with the exception of NHBC standard cover thicknesses for aesthetic purposes. This would need to comprise the removal of all made ground and / or topsoil within the remediation area, and would require inspection / supervision by an engineer from Geo-Matters Ltd. The regulatory authorities may also require validation testing of natural underlying soils should this option be considered. This scenario may be applicable if, for example, significant topographical modifications are undertaken which expose deeper soils.

4.2 Capping Materials

Imported soils must be tested for a general suite of determinands in advance. The Local Authority should be contacted before importation so that they may approve all soils.

4.2.1 Capping Thicknesses

The following (overleaf) capping thickness to protect human health are proposed where contaminated made ground remains *in situ*, subject to review of this RMS.

Table 4.0: Summary of Recommended Capping Rationale

Location	Recommended Capping Thickness	Rationale	Capping Make-up
All Gardens / Soft Landscaping	600mm*	Various Contamination	200mm Topsoil, 400mm Subsoil

* Capping only required if contaminated soils remain *in situ* in private gardens

Any soils imported to the site for use in garden areas will need to be proven chemically suitable for the residential end-use (to the satisfaction of the regulators).

Appropriate inspection(s) and analyses will be necessary should classification of topsoil material be required against standards such as BS3882: 2007 'Specification for Topsoil and Requirements for Use'.

Although the NHBC recommended topsoil thickness is currently 100mm, Geo-Matters Ltd recommend that 150mm of topsoil is provided in gardens and soft landscaping to provide a suitable growing medium for a variety of plant types.

4.3 Utilities

It is recommended that utilities providers should be contacted (prior to the completion of any irrecoverable works) for confirmation that the utility construction materials which have been selected by the Client meet with their approval.

4.4 Additional Contamination

Should significant suspected previously unidentified contamination be encountered within soils during future redevelopment, works should cease immediately and the site manager and Geo-Matters Ltd should be informed without delay. An inspection of these soils by an Engineer from Geo-Matters Ltd will be necessary in order to determine requirements for remedial works, if required.

Where contamination is suspected / identified the soils must be removed under engineer supervision. Validation sampling should be undertaken as described in Section 5.0. Excavated soils should be removed from site under appropriate waste management guidelines and all prevailing / relevant permits etc.

5.0 VALIDATION

The validation of completed remedial works will be required to provide the Regulatory Authorities with sufficient information to permit their approval for the works undertaken and outlined within this report. The following section outlines the necessary validation works associated with each phase of remedial works. All validation records should be presented to the relevant Regulatory Authorities for approval as necessary and should also be retained for inclusion within an overall completion report for the site.

The exact nature of the validation requirements will be dependent on the works completed and recommendations that are provided within the following sub-sections.

All recommendations are subject to the approval of the relevant Regulatory Authorities.

All soil samples must be retrieved by an Engineer and must be analysed at a UKAS / MCERTS accredited laboratory.

5.1 Excavation of Soils

Where contaminated made ground or natural soils are removed from the ground it is recommended that an engineer from Geo-Matters Ltd be present to record the removal of the soils.

Where made ground containing asbestos fibres is excavated or disturbed, it must be managed under controlled conditions. This must be prescribed and managed by a specialist contractor, but is likely to include the following at all times as a minimum:

- Made ground materials must be kept damp and watered down thoroughly to avoid the movement of dust across the site and beyond its boundaries. This may, for example, be managed through the dousing of areas by hose before and during all excavation works;
- All site workers involved in the movement of these materials must wear appropriate PPE at all times, including suitable masks and disposable overalls; and
- Suitable changing areas and PPE disposal systems should be in place (i.e. bespoke changing units).

The precautions that shall be imposed upon asbestos-impacted soils are considered more than sufficient to cover any and all risks associated with the other contaminants identified on site.

Validation inspections / sampling may be required within all resultant excavations (and beneath excavated soils etc.) following these works so that they can be approved by the regulatory authorities.

It is recommended that designated storage / treatment areas be identified in advance by the Client so that all excavated soils can be stored in an appropriate manner prior to their disposal / remediation.

5.2 Importation of Soils in Gardens and Soft Landscaping

Natural soils in most areas of the site were recorded to be 'clean', with no exceedances of the relevant T1SVs recorded. If site levels permit / or within foundation arisings, then clean site won soils could be used as part of the capping make-up. Any shortfall will need to be imported to site under all relevant permits / approvals. It may be possible to re-use other site-won materials on-site to minimise off-site disposal costs, although this will be dependent upon final site layouts and levels.

It is recommended that capping soils (both imported and site won) are approved for use by the relevant Regulatory Authority and that the correct EA licence (or CL:AIRE MMP) is in place prior to importation (where applicable) subject to Local Authority / NHBC Approval.

A list of Proposed Imported Capping Screening Values relating to soils for a residential end-use (with gardens) is presented within Appendix II.

5.3 Placement of Soils in Gardens and Soft Landscaping

Capping soils which are to be placed should be validated following their placement to confirm that appropriate thicknesses of soil have been applied in the designated areas. Validation is to include confirmation that an appropriate thickness of soils is present. An assessment ratio of **1 per 3 consecutive plots** is recommended, subject to the approval of the relevant regulatory authorities. All works in connection with the validation of capping soils should be undertaken by an Engineer from Geo-Matters Limited.

The validation reports produced as part of these works will include a description of the validation(s) and their findings, suitable photographic records and any other relevant information.

All findings should be presented to the relevant Regulatory Authority for approval and signed off on a plot-by-plot basis following completion of each set of validation works where appropriate.

5.4 Management of Materials on Site

As the remediation works may involve the movement of soils and other materials around the subject site, it is considered prudent to recommend control measures in order to ensure that cross-contamination and / or loss of materials is prevented.

Geo-Matters Ltd should be present on site to inspect the removal, relocation and placement of all sensitive materials. All stockpiles should be identified on site with markers / signs. Testing suites should be sufficient to enable the characterisation of the materials inspected.

Where contaminated materials are excavated from the ground for off-site disposal they should be either directly loaded into waiting wagons, or alternatively stored in a designated area of the site (under appropriate control measures) awaiting removal. Stockpiles will need to be placed on a suitable barrier (i.e. membrane) to avoid contaminating other soils on site. Further control measures (including dust suppression / coverage) may also be required, subject to the materials / contaminants identified.

All such stockpiles should be identified on site by management staff with markers / signs.

6.0 CONTACTS

Geo-Matters Ltd have not been provided with any specific regulatory authority contacts although presented below are the relevant Local Authority's details for reference:

South Holland District Council

Environmental Protection Team

South Holland District Council

Council Offices

Priory Road

Spalding

Lincolnshire

PE11 2XE

Telephone

01775 761161

pollution@sholland.gov.uk

7.0 DEVELOPER RESPONSIBILITIES

The following section provides an outline summary of the responsibilities of the developer for forthcoming works at the subject site for the sake of clarity.

7.1 Utilities / Supply Pipes

The developer will be responsible for all liaison and agreement with the appropriate water utility provider to ensure the correct grade of piping etc. are selected and utilised at the site.

7.2 Earthworks and Capping Soils

The developer will ensure the correct and appropriate construction of final development platforms including the provision and placement of clean capping soils. The developer should ensure that all necessary licenses, permits and exemptions (as applicable) are correctly in place prior to the commencement of site redevelopment works.

7.3 Environmental Safeguards

Consideration has been given to the protection of receptors (including human health receptors and controlled waters receptors) during the *ex situ* storage of materials at the site.

The site staff should ensure that all appropriate environmental controls are implemented prior to, and during, all remedial works. With regards to the storage of contaminated soils, this should comprise the placement of all such soils upon either impermeable hardstanding or suitable barrier membranes. These areas should be surrounded by a bund which prevents run-off from contaminated materials from impacting other areas of the site or off-site receptors. In addition, stockpiles must be covered during periods of rainfall so that additional contaminated leachate run-off is not generated.

The contractor responsible for the remedial works should ensure that an appropriate area is designated for the completion of these works.

APPENDIX I

Site Plans

DO NOT SCALE

NOTES:

-  Approx. Site Boundary
-  Approx. Location of Boreholes
-  Approx. Location of Gas Monitoring Wells
-  Approx. Location of Hand Dug Trial Pits
-  Extent of Proposed Capping (600mm)

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CLIENT:


MINSTER
PROPERTY GROUP

PROJECT:

Site off Willow Walk, Spalding

TITLE:

RMS Site Plan

SCALE@SIZE :

NTS

ISSUE:

DRAFT

DESIGN/DRAWN:

AT

DATE:

February 2019

PROJECT No:

GML18246

DRAWING No:

001

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The proposed layout plan shown is an extract taken from Drawing 358.LP.01 'Residential Development at Land off Willow Walk, Spalding' dated October 2017 by Studio 11 Architecture Ltd.

APPENDIX II

Generic Import Screening Values

Determinand	T1 Screening Value (mg/kg) @ 1% SOM	Source(s)
Arsenic	37.0	LQM S4UL
Cadmium	11.0	LQM S4UL
Chromium III	910.0	LQM S4UL
Chromium VI	6.0	LQM S4UL
Lead	200.0	C4SL
Selenium	250.0	LQM S4UL
Nickel	130.0	LQM S4UL
Copper	2400.0	LQM S4UL
Zinc	3700.0	LQM S4UL
Mercury (INORGANIC)	40.0	LQM S4UL
Benzo(a)pyrene	2.2	LQM S4UL
Phenols	280.0	LQM S4UL
TPH Aliphatic EC ₅ -EC ₆	42.0	LQM S4UL
TPH Aliphatic EC ₆ -EC ₈	100.0	LQM S4UL
TPH Aliphatic EC ₈ -EC ₁₀	27.0	LQM S4UL
TPH Aliphatic EC ₁₀ -EC ₁₂	130.0	LQM S4UL
TPH Aliphatic EC ₁₂ -EC ₁₆	1100.0	LQM S4UL
TPH Aliphatic EC ₁₆ -EC ₃₅	65000.0	LQM S4UL
TPH Aliphatic EC ₃₅ -EC ₄₄	65000.0	LQM S4UL
TPH Aromatic EC ₅ -EC ₇	70.0	LQM S4UL
TPH Aromatic EC ₇ -EC ₈	130.0	LQM S4UL
TPH Aromatic EC ₈ -EC ₁₀	34.0	LQM S4UL
TPH Aromatic EC ₁₀ -EC ₁₂	74.0	LQM S4UL
TPH Aromatic EC ₁₂ -EC ₁₆	140.0	LQM S4UL
TPH Aromatic EC ₁₆ -EC ₂₁	260.0	LQM S4UL
TPH Aromatic EC ₂₁ -EC ₃₅	1100.0	LQM S4UL
TPH Aromatic EC ₃₅ -EC ₄₄	1100.0	LQM S4UL
TPH C6-C10	27.0	LQM S4UL
TPH C10-C21	74.0	LQM S4UL
TPH C21-C44	1100.0	LQM S4UL
Benzene	0.087	LQM S4UL
Toluene	130.0	LQM S4UL
Ethylbenzene	47.0	LQM S4UL
Xylenes (lowest of O,M,P)	56.0	LQM S4UL
Asbestos	Fibres Present	In-House Standard (Geo-Matters Ltd)

NOTES: RESIDENTIAL SCREENING VALUES

The import values shown on these tables are subject to change pending revision of the regulatory framework(s) and/or UK assessment frameworks (including standards, models and HCVs).

These values are for a soil with 1% SOM.

The import criteria shown on this page may be altered to reflect soil conditions, including pH and SOM.

All values shown on this sheet are subject to verification by the Local Authority. These are provided in respect of protection of human health from soil sources.



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CLIENT:



PROJECT:

Site off Willow Walk, Spalding

TITLE:

RMS Import Values

SCALE@SIZE : NTS	ISSUE: DRAFT
DESIGN/DRAWN: AT	DATE: -
PROJECT No: GML18246	DRAWING No: 002