Ref: A90070-249/PRB-MB (HCA)/171216

17/12/16

[redacted]
Senior Development Manager
HCA

[redacted]

Dear [redacted]

**Tender: Land at Wighill Lane - Phase 2 Geo-environmental Investigation**

## 1. Background

WYG Environment Planning Transport Ltd (WYG) is pleased to submit a response to the invitation to competitive tender to undertake a Phase 2 geo-environmental investigation at land at Wighill Lane, Walton. Our proposal is based on the requirements as set out in Section 15 of the tender document. The objectives are to carry out a suitable investigation to be able to deal with likely planning conditions associated with Phase 1 of the development (covering around 1 Ha) and to provide sufficient data to enable an outline planning application to be submitted and assist in promoting the sale of Phase 2 (covering around 6.5 Ha).

## 2 Summary of Site Details

WYG have carried out a review of the supplied information provided by HCA and the key information for the site is summarised below. Please note, WYG have also recently carried out a detailed Phase 1 geo-environmental assessment of the former ROF site as part of a planning application for residential development and have a thorough understanding of the sites history and potential constraints – we have used this information where applicable. A site walkover was also undertaken on 2 December 2016.

| | |
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| Site Description | The site comprises a total area of around 7.5Ha and comprises an area of open ground covered by grass, with limited hard standing associated with the former social club in the west of the site. Mounds of material are located in the north and southeast of the site. The mound in the north is covered by grass, while the mound in the southeast is heavily vegetated and is part of a local wildlife area. |
| History | The site was originally used as agricultural land during the 19th and early 20th century. The site formed part of the former Royal Ordnance Factory No 8 Thorp Arch that was constructed in 1940 and decommissioned in 1958. The factory produced munitions for the army and air force for the Second World War and later the Korean War. The layout plan for this |

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| | |
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| | indicates a row of semi-detached houses along the western boundary which were labelled as managers houses (these were demolished in the 1980s). To the south of the site was the administration buildings (now occupied by a prison). A former railway line forming part of the ROF circular line ran across the central part of the site with part of this constructed in embankment and this appears to have been removed in the 1970's. Two other mounds are shown on historical mapping in the 1960s and on an old aerial photograph dating from the operation of the factory, one in the north and one in the south east. In view of this, it is considered that the mounds are associated with excess spoil associated with the construction of the factory in the 1940s and these mounds remain to current day as described above. A social club appears to have been constructed in the 1970s (which was demolished in 2016). |
| Published Geology | Published geology indicates that the site is underlain by the Brotherton Formation (Magnesian Limestone) (Principal Aquifer) which is overlain by Glacial Till. The Glacial Till is absent in the far north of the site. The 1:10000 scale map indicates the mounded areas as landscaped ground – areas of complex cut and fill.<br><br>The site is not located within a Source Protection Zone and the closest groundwater abstraction is approximately 520m from the site for spray irrigation. The closest watercourse is the River Wharfe 170m to the southwest of the site. |
| Potential/Identified Contamination Sources | *Potential Contamination Constraints*: The history of the site suggests that limited potentially contaminative activities have occurred at the site. However, sources such as the presence of mounds with unknown fill material that appeared to have been placed during the construction of the ordnance factory to the southeast of the site, and the presence of former housing on the western boundary of the site may be associated with localised contaminants. These sources could pose a low to medium risk to construction workers, final end users and adjacent site users, buildings and services in the western area of the site to be developed. The mound in the north of the site may also pose a risk to underlying groundwater due to a lack of superficial deposits above the Magnesian Limestone. There is also a potential risk from explosives chemicals and ordnance from production of munitions at the former factory to the southeast of the site which may have been deposited on the site. The risks from unexploded bombs dropped during WWII are not considered to be significant based upon findings of previous studies.<br><br>*Potential Geotechnical Constraints*: The ground conditions on site comprise of Made Ground and Glacial Clay overlying the Brotherton Formation (Magnesian Limestone). The depth and properties of Made |

| | |
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| | Ground together with previous buried substructures/foundations will require further investigation.<br><br>The key areas requiring intrusive investigation on the site are as follows:<br>• Mounded area in north of site<br>• Mounded area in southeast of site<br>• Route of former railway line (embankments removed in 1970s)<br>• Footprint of former housing, demolished in 1980s.<br>• Footprint of former social club, demolished in 2016. |

Note. The previous reports highlight the potential presence of dissolution features within the limestone however based on our previous studies in this area we do not consider this to be significant. In view of this we have not allowed for any specific investigations of the profile and condition of the Brotherton Formation rockhead as this would be difficult to achieve and be very expensive.

**Outline Methodology (1)**

Document Review and Preliminaries

All available information for the site relevant to this study will be reviewed. The design of the site investigation works will be finalised based following the review of all relevant information. This will include review of statutory service plans. A further, detailed site reconnaissance will be undertaken to confirm exploratory hole locations and access arrangements and also to meet key site contacts and discuss works with relevant site personnel.

We will also prepare a site specific health, safety and environmental management plan(s) with suitable method statements and risk assessments, in line with the CDM 2015 regulations during this stage.

UXO Risk Assessment

Based upon the information provided to date and the history of the site, we have allowed for commissioning a desk-based UXO risk assessment from a specialist sub-contractor (Dynasafe BACTEC).

Proposed Scope of Investigation Works

The scope of works outlined in the invitation to tender bill of quantities is as follows:

- 5 no. Cable percussion boreholes to up to 10m depth including gas/groundwater monitoring wells.
- 8 no. Window sample holes to 5m depth including gas/groundwater monitoring wells...
- 27 no. Trial pits to depths of typically 3m.
- 2 no. Soakaway tests in two of the trial pits in accordance with BRE Digest 365.

The proposed locations of the exploratory holes are shown on the enclosed location plan. These will be confirmed following completion of a further site visit to confirm access and location of any live services. Please note we have allowed for excavation of several trial pits in the raised area in the south east of the site and some vegetation clearance may be required to access this area. We have assumed that any necessary permits for these works in the SEGI will be obtained by the HCA.

A summary of the justification of each exploratory hole is given below:

- General coverage, random position – BH03, BH05, WS05, WS06, TP07, TP08, TP09, TP12, TP13, TP14, TP15, TP16, TP19, TP21 and TP24
- Targeted position – Northern mound – WS07, WS08, TP10 and TP11
- Targeted position – South eastern mound – TP25, TP26, TP27, TP28 and TP29
- Targeted position – Former railway line – WS03, WS04, TP17, TP18, TP20, TP22 and TP23
- Targeted position – Former houses - BH01, BH02, WS01, WS02, TP01, TP04 and TP06
- Targeted position - Former social club – BH04, TP02, TP03 and TP05

Following completion of the works, all exploratory holes will be surveyed in to national grid coordinates and ordnance datum.

Gas and groundwater monitoring installations have been included in all boreholes (13 no.). Boreholes will be equipped with flush covers. Gas monitoring and groundwater dipping will be carried out on 4 separate occasions. Groundwater sampling will be carried out on one occasion.

Contamination Laboratory Testing

All soil and groundwater samples should be submitted to a laboratory registered with UK Accreditation Service (UKAS) and The Environment Agency's Monitoring Certification Scheme (MCERTs) accreditation for a range of analytical suites. All soil and groundwater samples will be couriered under chain of custody protocols within chilled cooler boxes.

The actual sampling will be dependent upon the findings of the investigation but we have allowed for the following as outlined in the bill of quantities:

- 30 no. Soil samples tested for inorganics (As, Cd, Cr (hexavalent), Cu, Cn, Pb, Hg, Ni, Se, Zn, $SO_4$ (total and water soluble), S, and CN); speciated organics (Criteria Working Group TPH and PAH), Soil Organic Matter and pH, asbestos including quantification where detected; Sulphates (total and water soluble) and sulphate for concrete attack determination in accordance with BRE Special Digest 1.
- 1 No. soil sample tested for Waste Acceptance Criteria to assist with inert, non-hazardous or hazardous waste classification.
- 10. No Samples should also be taken for representative leachate testing to assist with controlled waters risk assessment in accordance with British Standards Institute (2002)

BS12457 *"Characterisation of Waste – Leaching -Compliance Test for Leaching of Granular Waste Materials and Sludges: Part 2"* (single stage 10:1). Such analysis should also be carried out on any solid samples that have been shown to have relatively high concentrations of determinants from solid sampling to establish availability.

- 18 no. groundwater and leachate tested for inorganics (As, Cd, Cr (hexavalent), Cu, Cn, Pb, Hg, Ni, Se, Zn, $SO_4$ (total and water soluble), S, and CN); speciated organics (Criteria Working Group TPH and PAH), ammoniacal nitrogen,dissolved organic carbon, VOCs/SVOCs and pH.

Geotechnical Laboratory Testing

The geotechnical testing will be undertaken by a UK Accreditation Service (UKAS) accredited approved laboratory. The selection of tests will be dependent on the types of materials encountered during the ground investigation. All testing should be completed to BS1377 Parts 1-9 Methods of Testing for Soil for Engineering Purposes. Representative geotechnical testing in accordance with British Standards Institute (1990) *"BS1377: Methods of test for Soils for Civil Engineering Purposes"*, depending upon conditions encountered, to potentially include particle size distribution, bulk density, liquid and plastic limits, moisture condition value, and index properties, but sufficient to inform foundation and construction design.

We have completed the bill of quantities using the provided quantities however we have provided a rate only for the consolidated drained triaxial with pore water pressure measurement on 38mm samples as we do not feel that suitable samples will be obtained from the superficial deposits for this test.

Risk assessment

Interpretation and refinement of the CSM with the on-site conditions encountered and the laboratory analysis results to produce a **DIAGRAMMATIC** Conceptual Site Model and complete a Generic Quantitative Risk Assessment (GQRA) for human health and controlled waters. This should be carried out following the statistical modelling outlined within the CIEH & CL:AIRE (May 2008) *"Guidance on Comparing Soil Contamination Data with a Critical Concentration"*, or other suitable published techniques as fully justified. Separate consideration of targeted and random samples should be considered, as necessary. Plans should be presented outlining areas of the site for any contaminants that fail the GQRA and controlled waters risk assessments clearly showing fail/pass areas. Full consideration should be given as to the meaning as a fail at the GAC, i.e. that this is simply a screen at a minimum risk threshold and does not necessarily immediately warrant further work. In addition, any exceedances should also be considered against the new Part 2A of the Environmental Protection Act 1990 Statutory Guidance (DEFRA, April 2012) as to whether they are likely to fall within Category 4, and in particular under Category 4 Screening Levels (C4SLs), as well as within Normal Background Concentrations (NBCs). Tenders are directed to the Impact Assessment to the changes to the Statutory Guidance, as well as DEFRA research into the C4SL and NBC topics. It is acknowledged that large areas of the site will not be able to be investigated in detail. Therefore, suitable inference between location and what may be present should be provided, for example, though probabilistic risk modelling. As the final design of any development is not determined, all future end uses should be considered.

Reporting

A ground investigation factual report will be prepared.

A geo-environmental interpretative report will be prepared which will include the following minimum information:

- A summary of the pertinent factual elements of the Desk Study information;
- A description of the work carried out during the intrusive site investigation;
- A colour site plan identifying locations of all exploratory work and any other pertinent information;
- Exploratory hole logs with accompanying level information and photographs where appropriate. Detail and presentation of logs will conform to BS5930:2015 and Eurocode 7 (Part 1 & Part 2) including details of the samples taken, the techniques used, and in-situ test results;
- Presentation of laboratory results including information on preservation methods, analytical procedures used, qualitative and quantitative results;
- Full details of the quality assurance procedures employed;
- An updated Conceptual Site Model (CSM) of the site which should identify, and quantify where possible, the Source – Pathway – Receptor linkages understood to exist;
- Completion of a Generic Quantitative Risk Assessment (GQRA) for human health and controlled waters. This will be carried out following the statistical modelling outlined within the CIEH & CL:AIRE (May 2008) *"Guidance on Comparing Soil Contamination Data with a Critical Concentration"*, or other suitable published techniques as fully justified. Separate consideration of targeted and random samples will be considered, as necessary. Plans will be presented outlining areas of the site for any contaminants that fail the GQRA and controlled waters risk assessments clearly showing fail/pass areas. Full consideration should be given as to the meaning as a fail at the GAC. In addition, any exceedances should also be considered against the new Part 2A of the Environmental Protection Act 1990 Statutory Guidance (DEFRA, April 2012) as to whether they are likely to fall within Category 4, and in particular under Category 4 Screening Levels (C4SLs), as well as within Normal Background Concentrations (NBCs). The key objective is to identify issues that may lead to significant harm or a significant possibility of such harm or pollution or likely pollution of controlled waters.
- Ground gas risk assessment in accordance with both Revised Wilson & Card as well as NHBC Traffic Lights (CIRIA, 2007).
- Preliminary foundation design for buildings and roads should be presented, together with, requirement for any ground improvement, requirement for ground retention or stabilisation measures, concrete specification, soakaway information and limitations based upon hydrogeological setting, as well as other relevant information.
- If necessary, dependant on the investigation findings, recommendations will be made for further work which could include remedial measures, and / or detailed Quantitative Risk Assessment (dQRA) to inform or limit remedial measures.

- As part of the report note of any limitations to development (e.g. factors that may affect the positioning of buildings, roads, SUDS and soakaway implications/design, etc) so as to ensure sustainable remediation and development is possible to inform the master plan and subsequent full planning application. The report will also include reference to any uncertainties.

Sustainable Remedial Options Appraisal

Indicative cost for a Sustainable Remedial Options Appraisal should be included and were instructed undertaken for any areas where contamination is likely to pose a risk to the considered end use. This should be based in 'the real world' and apply 'common sense' and provide an indication of relevant techniques that will work in the spaces available, ground conditions encountered, with suitable reference to sustainability considerations as well as techniques that will not leave the site with geotechnical difficulties to overcome for the subsequent development. If desired, early remedial / ground contractor input can be proposed from a third party contractor as part of your 'team'.

Covering letter

A covering letter will be produced which will include likely costs and programmes for:

1. Recommendations for further work; and
2. Likely indicative remedial technique(s) proposed within the Sustainable Remedial Options Appraisal.

## Health and safety considerations (2)

This section provides an outline assessment of the Health and Safety considerations for the proposed scheme.

It is noted that a detailed Health and Safety Plan will be produced for the site, which will provide information and considerations with regards to site safety working requirements.

The following legislation (enforceable at the time of preparation) shall be complied with;

- Health and Safety at Work Act, 1974 (as amended).
- CDM Regulations 2015
- Management of Health and Safety at Work Regulation, 1999 (as amended).
- Personal Protective Equipment at Work Regulations, 1992 (as amended).
- Manual Handling of Operations Regulations, 1992 (as amended).

In addition, the following reference and safety documents will be adhered to:

1. WYG Health and Safety Policy.
2. WYG Method Statements – Hand pitting/ Window Sampling/ Standard Penetration Testing (SPT) etc.
3. WYG Site Specific Risk Assessment.
4. Drillers Method Statement and Risk Assessment.
6. COSHH Assessments.

7. Health and Safety Executive (2014), Avoiding danger from underground services, Guidance notes from HSG47 3rd Edition.

Notwithstanding the above, any site specific restrictions or safe working practise imposed by the client will be adhered to at all times.

## Site Inductions and Daily Communication

Before any intrusive ground investigation work takes place, all operatives to attend the site will receive a site briefing/tool box talk, which shall will be delivered by a WYG engineer, detailing the scope of work to be undertaken. A site inspection will also be undertaken by WYG to assess the site and any other perceived risks (i.e. weather conditions) and any amendments/actions noted to the risk assessment updated accordingly. No work will be undertaken before this has been undertaken.

The supervising engineer will check the available service drawings and a full CAT scan will be completed in the area of proposed boring / excavation. Provided that this indicates the area to be clear of services then the works will proceed. The supervising engineer will issue a permit to dig prior to intrusive investigation.

## UXO Risk

A detailed UXO report was produced for the Phase 1 area (former social club, off Grange Avenue). The site was assessed as low risk of UXO, however, due to the presence of a former Ordnance factory at the site, there are specific areas that may be a medium risk the following mitigation measures are required:

- Site Specific UXO Awareness Briefings to all personnel conducting intrusive works
- A UXO specialist will be in attendance during the trial pitting works in mounded areas only.

The UXO specialist will oversee the excavation works in areas of Made Ground, in order to identify any suspicious object and provide reactive support to ground works. The following procedures will be adopted if a suspected UXO is encountered:

- Assume the object is dangerous
- DO NOT TOUCH OR INTEFERE WITH THE OBJECT
- If the object remains in the excavation leave it undisturbed in place; if the object is identified within the soil stockpile or skip do not move or disturb it.
- If available refer to UXO briefing for site / object specific information.
- Stop works & cordon area off and evacuate work area immediately.
- Inform the site authority / PM immediately.
- Telephone police (only when instructed to do so).

A UXO safety poster will be available for review on site.

## Work Boundaries and on site interfaces

All work will take place within the survey boundary highlighted in red on the borehole location plan. All work areas will be appropriately fenced off to prevent third parties entering.

## Manual Handling

Manual handling tasks will be in accordance with the manual handling operations regulations 1992; the preferred method is to eliminate the manual handling risk and to use a mechanical alternative where ever possible. Operatives must be of good general fitness and have had formal manual handling training before carrying out any manual handling activities. A manual handling risk assessment will be included and safe manual handling techniques will be employed. If in doubt of weight of any load, seek assistance. An operative may only lift a maximum of 25 kg.

Handling of bulk samples, and cool boxes with soil samples to be undertaken by WYG staff will be done so in accordance with the WYG health and safety policy and HSE manual handling guidance.

## Contaminated Soil and Groundwater

The likelihood of significant contamination being present at this site is considered to be low. The Made Ground and underlying soils may be contaminated by metals, hydrocarbons and asbestos containing material associated with the previous land usage.

The WYG engineer will make visual and olfactory observations to determine the presence of contamination within the ground. Periodic monitoring using a PID will be undertaken to check for the presence of vapours.

If significant contamination is observed, this will be communicated to all work parties on site. A designated work area will be established to ensure that only operatives within the work are will be exposed to contaminated arising and potential ground gas.

The following rules will be adopted help protect against ill effects from any contamination encountered:

- Always thoroughly wash hands, forearms and face in finishing work and before any break during which food or drink will be handled.
- Always remove any dirty work clothing before leaving site, entering a vehicle or eating.
- All cuts and skin abrasions must be kept clean and covered with a waterproof plaster. For more serious wounds medical advice should be sought. All wound dressings should be changed at the end of the working day.
- Always wear the PPE prescribed for the job and on completion of the job dispose of any contaminated clothing.

## Environmental Considerations

The main materials that pose a risk to the environment are as follows:

- Potentially contaminated soils.
- Spillage of contaminated liquids from drilling rig (including hydraulic oil, coolant and diesel).

Therefore, care will be taken to prevent spillages and leaks to drains, sewers and watercourses as they could result in damage to the environment and an environmental incident.

Hand excavated soils will be placed adjacent to the inspection pits and boreholes and re-instated on completion of the testing with surplus arisings placed in the skip.

Spill kits and drip trays will be placed local to plant equipment.

## Nuisance (Noise)

When conducting construction-based activities there is the potential to generate excessive noise levels. This poses both a Health & Safety Risk as well as an environmental risk (considered a nuisance issue).

To help minimise noise levels on site the following measures should be adopted:

- All site equipment that has the potential to create unacceptable noise emissions is maintained in an acceptable state so as to reduce noise emissions;
- Any neighbours within the likely zone of influence should be informed about any activities that are likely to give rise to significantly increased noise levels before they occur (these communications will be via HCA);
- Works likely to cause nuisance are to be limited to fixed working hours and these are defined as follows:

  08:00 – 16:30 (Winter)
  08:00 – 18:00 (Summer)

## Sub-Contractors (3)

We are proposing to utilise sub-contractors for the site investigation fieldworks and laboratory testing elements of the works.

- UXO Specialists. EOD Contracts Limited, Unit G1 Holly Farm Business Park, Honiley Kenilworth, Warwickshire. EOD is a member of the Institute of Explosive Engineers. They conform to both ISO 9001:2008 and ISO 14001:2004 and subscribe to the Contractors Health and Safety Assessment Scheme (CHAS).
- Site Investigation Fieldworks – Various. WYG operate a number of term agreements and partnering arrangements with an established network of reputable sub-contractors covering the whole of the UK. We believe this approach allows us to select the appropriate plant and equipment for a project rather than what is available only from the in-house resource. We also

believe that this approach allows us to select the best value and highest quality subcontractors for a particular project from one of our trusted subcontractors. Specialist services are generally provided from local resource who have a high level of local knowledge and experience and at the same time we are able to reduce the amount of mileage of plant for individual projects and contribute directly to local economies. The sub contract resource is always managed and supervised by a WYG employed site supervisor, full time on site. The assessment of our sub-contractors' and sub-consultants' health and safety arrangements and competence is an integral part of our pre-qualification (PQQ) procedure. Full details of the specific site investigation sub-contractor will be provided prior to commencement of siteworks.

- Laboratory Testing – Jones Environmental Laboratories, Deeside, Flintshire. Jones Environmental currently employs over 80 staff and is one of the biggest contaminated land laboratories in the UK. ISO 17025/ILAC accreditation was awarded in January 2008 and MCERTS (UK only) was awarded in June 2008. Analysis will be undertaken in accordance with their UKAS and MCerts accreditation.

**Proposed Programme (4)**

The overall programme will be dependent upon a variety of factors and a detailed programme will be prepared if we are awarded the commission. The works would be managed by a dedicated project manager based in the Leeds office and we would aim to meet your programme requirements. We would typically be able to start work on the project within one week from the date of receipt of your instruction to proceed which we request in writing. An indication of likely timescales for the works is presented below:

| | |
|---|---|
| • Preliminaries and UXO Desk Study | 2 weeks |
| • Site Investigation Fieldworks | 1 week |
| • Gas/ Groundwater monitoring | 4 weeks after completion of fieldworks |
| • Laboratory testing | 2 weeks after completion of fieldworks |
| • Factual report | 1 week after completion of lab testing. |
| • Interpretative Report | 3 weeks after completion of lab testing |
| • Addendum Gas Monitoring Report | 1 week after completion of monitoring |

Total anticipated programme is 10 weeks.

Assuming a start date in w/c 2 January 2017, this would give the following deadlines:

| | |
|---|---|
| • Completion of fieldworks | 20 January 2017 |
| • Completion of Lab testing | 3 February 2017 |
| • Factual Report | 10 February 2017 |
| • Interp Report | 24 February 2017 |
| • Addendum report | 3 March 2017 |

## Proposed Staff (5)

WYG is a multi-disciplinary consultancy with its registered plc office in Leeds, which is also the Head Office of the group. WYG has extensive experience in the successful delivery of services required for this project and our core project team is comprised of staff with experience in their disciplines which is specifically relevant to the management and design of flexible solutions for brownfield sites.

The right team is critical to the success of the project and our delivery team have been selected carefully to ensure they have the right level of expertise, skill and experience to successfully deliver the scope of work. We pride ourselves in bringing imaginative and innovative ideas both in technical solutions but also in process approach.

Table 1 summarises the WYG staff that are proposed to be involved in the project and highlights those who are considered to be 'Competent Persons' as defined by the National Planning Policy Framework with an asterisk. Copies of their one page CVS are included in Appendix 2.

[redacted] will be the Project Director with overall responsibility for delivery and quality of the project. [redacted] will review and approve the Draft and Final reports prior to their issue.

[redacted] will be the lead engineer in relation to ground contamination project manager. [redacted] role will include liaison with the client, management of the delivery team and ensuring work is delivered on time and within budget. He will participate in progress meetings and be involved in presentation of the findings.

[redacted] will coordinate and oversee delivery of the geotechnical aspects of the work.

[redacted] will manage and supervise the site investigation fieldworks.

[redacted] will coordinate and oversee the geo-environmental aspects of the work.

## Management (6)

We have a Group Safety, Health, Environmental and Quality (SHEQ) Management System in place that contains the Company policies and procedures. The system meets the requirements of the three international standards ISO 9001 (2008), ISO 14001 (2004) and BS OHSAS 18001 (2007) and is available to all our employees via a Group SHEQ portal on our Company Intranet.

These procedures make sure that projects are regularly reviewed, both by the project team and by the Project Director, to check that its aims and objectives are achieved and that the outputs comply with the project brief, company procedures and protocols. The overall control of quality processes is identified in the Project Plan, ensuring that concept, approach and methodology are documented, communicated and managed.

WYG regularly undertake combined land quality and geotechnical assessments and are comfortable producing a report that combines both elements. All the staff we are proposing to be involved with the project are based in our Leeds office and sit within the same team thus avoiding the need for remote management of team members. All staff have recent experience of delivering similar work and have an awareness of geotechnical information that is relevant to the land quality assessment and vice versa.

An internal weekly project progress meeting is planned to internally track progress and allow sharing of relevant information as it is collated and assessed. This will also allow WYG to remind staff of the deadlines involved and enable the team to identify areas where further input is required.

We propose to hold a weekly update call with HCA to notify of project progress. It is intended that this take a maximum of 30 minutes with the aim to be shorter than this wherever possible. It is proposed the first call will take place a week after the kick-start teleconference referred to in the tender documentation and at weekly intervals thereafter.

## Fees and Costs (7)

For the provision of the above services we propose the costs presented in Table 2 below. Refer to Appendix 3 for a detailed breakdown of these costs and the associated resource schedule.

**Table 2 – Fee summary**

| Task | Description | [redacted] |
|---|---|---|
| 1 | Ground Investigation Preliminaries | |
| 2 | UXO Desk Study (Sub contracted) | |
| 3 | Ground Investigation Works | |
| | *Siteworks* | |
| | *Site Supervision: 2 No. Experienced Engineers (5 days)* | |
| | *UXO Specialist site attendance (2 days)* | |
| 4 | Gas and groundwater monitoring and sampling (4 rounds) | |

| | | |
|---|---|---|
| 5 | Laboratory Testing - Contamination | [redacted] |
| 6 | Laboratory testing – Geotechnical | |
| 7 | Reporting | |
| | *Factual reporting* | |
| | *Interpretative reporting* | |
| | **Total (exc. VAT)** | |

**Pricing Assumptions**

The following have been assumed during the compilation of our scope of works and tender price:-

- Drive on access is available for the plant at the required locations;
- Waste disposal. Cost estimates for waste disposal have been included in our price however the final actual cannot be determined until the level of contamination in the soil, and any purged groundwater, has been assessed;
- Any access permissions and/ or licences will be obtained by others prior to our start date.
- We have assumed that electronic copies of all previous relevant reports together with service drawings, CAD site plans and all service information (including private and statutory) will be provided to us.

**Provisional sums**

In addition to the items on the BoQ, we have made cost estimates for the following provisional items:

1. **Access and Reinstatement.** Import of additional clean material associated with the reinstatement of either cable percussive boreholes or windowless soil bores. [redacted]
2. **Waste Disposal**: Any waste arisings produced will be required to be disposed off-site to a licensed waste disposal/treatment facility by the consultant who will notify the HCA and obtained appropriate waste transfer tickets. [redacted]
3. **Specialist sub-surface clearance of all intrusive locations** [redacted]
4. **Additional soil testing for ground gas risk assessment.** Total organic carbon content (carried out on the fine soil fraction only) as tested in accordance with Environment Agency (2005). *"Guidance on sampling and testing of wastes to meet landfill waste acceptance procedures"* and (2006) *"Guidance for waste destined for disposal in landfills"*; Dissolved organic carbon in leachate. [redacted] per TOC and [redacted] per DOC.
5. **Further ground gas monitoring**
    a. Further two rounds of ground gas monitoring with one visit to include ground gas sampling of the two worst impacted wells with samples in tedlar bags. [redacted]
    b. Laboratory analysis of 2 no. tedlar bags with standard turnaround times (please indicate costs for expedited turnaround) of two samples for $CH_4$, $CO_2$, CO, $O_2$ (all in %v/v) and $H_2S$ (in ppm). [redacted]

Please note, the actual, final cost for the above items will be dependent upon what is carried out.

**Conflict of interest (8)**

We confirm that there are no conflicts of interest associated with carrying out the above works.

We trust that this proposal is of interest to yourselves and please do not hesitate to contact me if you need any more information.

Yours sincerely
for **WYG ENVIRONMENT PLANNING TRANSPORT LTD**

[redacted]

[redacted]

*Associate Director*

[redacted]

*Associate Director*

Encl.

Appendix 1 – Proposed exploratory hole locations
Appendix 2 – CVs of key staff
Appendix 3 - Bill of Quantities and Resource Schedule