

MULTIDISCIPLINARY TECHNICAL SERVICES FRAMEWORK
OJEU Ref 2018/S 127-289621
APPOINTMENT OF CONSULTANT

INSTRUCTION

Environment Agency DN536461 Ailsworth Landfill – Review of Phase 2 Remediation Options & Selection of Alternative Treatment Action(s) to Accelerate Remediation

Date	20/05/2021	Environment Agency	Reference Number [REDACTED] To be quoted on all correspondence relating to this Instruction
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The Consultant entered into a contract dated 25th April 2019 with the Agency whereby it was appointed as a consultant on the Multidisciplinary Panel (the "Framework Contract").

Environment Agency is a Public Sector Body under the Framework Contract.

The Public Sector Body and the Consultant acknowledge and agree that this document is to be treated as an "Instruction" from the Public Sector Body under and for the purposes of the Framework Contract.

The Consultant agrees to supply to the Public Sector Body the Services specified below on and subject to the terms and conditions of this Instruction and the Framework Contract.

Unless otherwise defined in this Instruction, terms used in this Instruction shall have the meaning given to them in the Framework Contract.

The Employer

Environment Agency is the Public Sector Body.

In so far as they relate to the appointment of the Consultant to provide the Services all references to the Agency in the Framework Contract shall also be deemed to be references to the Public Sector Body for the purposes of the Instructions and the Framework Contract.

PUBLIC SECTOR BODY DETAILS

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CONSULTANT DETAILS

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1. INSTRUCTION PERIOD
(1.1) Commencement Date This Instruction shall commence on: 24th May 2021
(1.2) Instruction Period 24/05/21 – 24/01/22

2. SERVICES REQUIREMENTS
The following Services shall be provided: Commission Requirements 1. Commission Summary and Background The Environment Agency requires a consultant to review previous studies and use their expertise and experience to identify, shortlist and select an alternative remedial treatment option to accelerate remediation of this orphan Special Site. This work is required to deliver Phase 2 (source removal or treatment) of the agreed 30 year active remediation strategy for this site at Helpston. The output will be a report including a sufficiently detailed specification to enable the client to procure a separate design and build contract to begin to implement the Phase 2 works from April 2022. This review is necessary as we have established that ex-situ bio-remediation, which was identified by the previous work as the preferred option for Phase 2, will now present several regulatory and financial challenges. <u>Site Location</u> The site is located at national grid reference TF12000 03350 as shown in Appendix B of Ref. 1.



Background

Two former limestone quarries near to the village of Helpston were used to dispose of domestic, commercial and industrial waste. These unlined sites operated in the 1970s-1980s accepting mixed household and commercial waste, including 40 tonnes of waste pesticides. They were licensed under Control of Pollution Act (CoPA) 1974 so there were no completion requirements on licence surrender. These licences were returned to the local authority prior to 1994. In 1987, trace quantities of mecoprop (a broad leaf herbicide) were identified in an Anglian Water (AWS) public water supply borehole at Etton roughly 3.5 km from the site.

Subsequent investigations found that the former infilled quarries were leaching contaminants, including mecoprop and its breakdown products, into the underlying aquifer polluting 8km² of groundwater and causing the aquifer to fail the Drinking Water Protected Area Test under the Water Framework Directive.

Following determination as Contaminated Land and designation as a Special Site under Part 2A of the Environmental Protection Act 1990 (the Contaminated Land Regime), the sites were declared orphan as the company who had operated the landfills was effectively dormant with no assets. This company was subsequently wound up. And the responsibility for management and remediation fell to the Environment Agency (EA).

The EA progressed further phases of site investigation to better understand the situation.

There are two pathways to groundwater - a larger plume (Pathway 1) from the Ailsworth Road Landfill, which pollutes the drinking water for 47,000 people, and a smaller plume (Pathway 2) from Ben Johnsons's Pit which pollutes available resource, but with no public water abstraction licensing restrictions that equates to a potential use for a further 13,700 people. The two plumes are separated by a geological fault.

The initial intervention was to install a line of pumping wells east of the landfills to create a hydraulic barrier to sever the plume migration pathways. The abstracted water is pumped to a groundwater treatment plant at Helpston where mecoprop, metaldehyde and ammonia

are removed prior to the treated water being discharged to a pond and subsequently a surface stream. The plant operates all year round.

In 2004 a remediation strategy was agreed by the EA Board and DEFRA detailing a 30 year active remediation strategy for Helpston split into 3 phases. This comprised a 30 year active phase (Phase 1 and 2) followed by a period of monitored natural attenuation for up to a further 30 years:

- Phase 1 is the groundwater pump and treat plant, operating since 2006 and treating 200-250m³ of water per day to contain both plumes
- Phase 2 is development of options to address the source to accelerate remediation to achieve remedial targets within 30 years (**this project**)
- Phase 3 is a 30 year period of monitored natural attenuation, which will begin for both landfills once Phase 2 has been completed

Phase 1 has been a success as the creation of a hydraulic barrier and subsequent containment system has prevented the contamination spreading.

Because it has been estimated that without other intervention the hydraulic barrier and the treatment plant will need to operate for hundreds of years before mecoprop concentrations (the primary contaminant of concern) would fall to acceptable levels at the Etton borehole, attention has now turned to remediation of the landfill and addressing the contaminants of concern.

In addition to mecoprop other contaminants listed on the contaminated land determination are:

- Dichlorprop (herbicide)
- Dicamba (herbicide)
- Isoproturon (herbicide)
- 4-chloro-2-methylphenol (primary breakdown product of mecoprop)
- Ammonium (inorganic by-product of anaerobic degradation of organic matter)
- Chloride (inorganic determinand)

The other herbicides are found at much lower concentrations than mecoprop. The previous studies recommended that some of these be removed from the list of contaminants of concern.

In recent years, due to improved analytical testing methods, the molluscicide metaldehyde has also been detected in the two contaminant plumes. Although this has been detected at much lower concentrations compared to mecoprop, the previous studies recommended it be added as a contaminant of concern with regard to Ailsworth Road and Pathway 1 due to the

potential for it to rise above the Drinking Water Standard (DWS) at Etton during drought conditions.

The previous studies recommended the following revised list of contaminants of concern and suggested that monitoring continue for ammonia and chloride:

- Mecorcrop
- 4-chloro-2-methylphenol (primary breakdown product of mecoprop)
- Metaldehyde
- Isoproturon

In the previous studies remedial target values were only set for mecoprop on the basis that the additional contaminants of concern were present at much lower concentrations and would be treated to a similar extent as mecoprop by the preferred option of ex-situ bioremediation.

The primary purpose of addressing the source is to reduce the time over which the groundwater pump and treat plant is required to operate. However, before any risk mitigation works can commence, a comprehensive appraisal of all suitable options needs to be undertaken to ensure the selected approach meets all relevant criteria.

This project (Phase 2) is a scheme to review and evaluate all pertinent information relating to the former landfill with the primary objective of shortlisting, and finally selecting, the most suitable remediation option for this problem site. The options identified, and the ultimate approach selected, must be thoroughly evaluated and appraised on the basis of the available technical, commercial and legal criteria.

The focus of any remedial treatment will be on the **Ailsworth Road site**. Previous assessments have established that source treatment is cost beneficial for Ailsworth Road, because it is directly impacting the public water supply, but not for Ben Johnson's Pit where the benefits are less.

The preferred option which was identified from the earlier studies was **ex-situ bioremediation**. This was based on excavating waste to treat the contaminants of concern to an agreed remedial target value under a mobile plant licence, followed by re-use of 99% of the waste to backfill the excavation without a permit under the CL:AIRE Definition of Waste Code of Practice (DoWCoP). We have since established that DoWCoP is not appropriate as the waste in the landfill falls outside of the scope of DoWCoP, there would be regulatory challenges to obtain the required Deposit for Recovery permit and that around 50% of waste would have to be removed off site at prohibitive cost (see options previously considered below for more information).

As indicated, the plan for any such works is to accelerate the remediation of the contamination so that the active phase can be completed within the original target of 30 years. **It is important to note that the groundwater treatment plant will not be operated beyond 30 years.** Without addressing the source in some way, once hydraulic containment stops, the plume will return.

Clarity is now needed on a strategy to address the source in order that a realistic plan can be formulated to wind down the groundwater treatment plant.

2. Objectives

Remediation Criteria and Objectives

Part 2A

As indicated above, the site has been formally determined as Contaminated Land and designated a Special Site under the Part 2A legislation. The Part 2A regime imposes various criteria and stipulations that need to be considered when evaluating a suitable risk mitigation strategy.

The broad aim of remediation under Part 2A is: (a) to remove identified significant contaminant linkages, or permanently disrupt them to ensure they are no longer significant and that risks are reduced to below an unacceptable level; and/or (b) to take reasonable measures to remedy harm or pollution that has been caused by a significant contaminant linkage.

With regard the standard of remediation, the guidance goes on to state that remediation actions must be reasonable with regard to the cost and the seriousness of the pollution or harm being caused. And the identified risks should be reduced to an acceptable level – or as far as is reasonably practicable.

In deciding what is reasonable, any remedial strategy should have particular regard to: (a) the practicability, effectiveness and durability of remediation; (b) the health and environmental impacts of the chosen remedial options; (c) the financial cost which is likely to be involved; and (d) the benefits of remediation with regard to the seriousness of the harm or pollution of controlled waters in question.

Further information on the requirements for remediation under the Part 2A legislation can be found in Section 6 of the 2012 Contaminated Land Statutory Guidance.

Prior to devising any strategy for evaluating remediation options, it is vital that the significant contaminant linkages (SCLs) which formed the basis of the original site determination and the revised list of contaminants of concern presented in the 2019 Remediation Statement (Ref.2) plus metaldehyde, are fully understood in terms of their nature and characteristics.

It is the identified impact together with the unacceptable risk posed by these SCLs and contaminants of concern that will underpin any remediation strategy.

Waste Legislative and Regulation Requirements

Waste regulation in England is controlled through a range of Acts and Statutory Instruments. Most of these are derived from EU Directives; principally the Waste Framework Directive (WFD) and the Landfill Directive (LfD). The permitting and regulation of waste facilities is controlled through the Environmental Permitting (England and Wales) Regulations 2016 (EPR).

The holder of a substance or object must decide whether they are discarding it and thus whether they are dealing with waste. If a material is waste (eg a former landfill or exempt waste disposal operation), it will remain waste and must be subject to the appropriate disposal or recovery permit when the holder treats, recovers or disposes of it.

Waste that has been deliberately or intentionally disposed of or abandoned into or onto land is landfill. That is the case whether or not there is an environmental permit. Waste may have been disposed of into or onto land prior to the introduction of waste management legislation or under a waste disposal exemption. Whether there is a permit or the waste was disposed of under an exemption doesn't alter the status of the material as waste.

Where material was placed on land for a purpose or benefit before waste legislation existed (i.e. prior to 1974) it may not be waste. The EA will consider on a site specific basis what the original intention of the holder of that material was.

Landfilled waste remains waste until it has been through a treatment process (WFD, article 3(14)) and is fully recovered or it achieves end-of-waste status (WFD, article 6).

Where waste has been put to beneficial use as a recovery activity in accordance with an environmental permit it ceases to be waste.

Our acceptance of the surrender of a landfill environmental permit does not change the status of the material discarded as waste. It confirms that we are satisfied that the waste will not present a risk of pollution if left undisturbed.

Whilst the excavation of landfilled waste does not require a permit, the treatment and/or redeposit of the material does.

The holder of waste must use our technical guidance WM3 to help them decide if they have hazardous or non-hazardous waste. If they want to dispose of waste to landfill, they must characterise it to decide which class of landfill they can send it to.

An establishment or undertaking must consider the waste hierarchy when they transfer their waste (The Waste (England and Wales) Regulations 2011, Regulation 12). This includes when waste is subject to a treatment operation that changes the characteristics of the waste. Treatment may:

- Sort or separate wastes so that some or all of it can be reused or recycled, or
- change the wastes characteristics so that it can be reused, recycled or sent to energy from waste plant, or
- change the waste characteristics by reducing the hazard so that it can be sent to a different class of landfill or deposit for recovery activity

Anglian Water Requirements

As indicated above, the pollution from these former landfills is impacting local groundwater and an AWS abstraction at Etton. Following a new approach supported by Defra for the Ofwat 2019 price review (PR19), water companies are able to enter into agreements to remediate orphan contaminated land sites. Discussions with AWS under PR19 led to an

agreement where Etton was included in the Water Industry National Environment Programme (WINEP) because it is for a Drinking Water Protected Area, is deemed cost beneficial and has customer's willingness to pay. The deadline for completion of the work is December 2024, otherwise there is potentially a penalty imposed by the water company.

PR19 determines the price, service and incentive package for water companies for the period 2020-25. The obligation on AWS under PR19 places certain stipulations on and requirements for the remediation approach to be implemented by the EA.

Objectives for remediation as specified under the PR19 agreement (in conjunction with requirements of Part 2A and waste legislation):

- To accelerate remediation timescales of the Helpston Groundwater Remediation project by targeting Ailsworth Road landfill Contaminated Land site, works to be completed by 22nd December 2024.
- To increase certainty of the solution by removing the source of the pollutants impacting Etton Public Water Supply (PWS).
- To increase resilience of the abstraction during drought conditions, which have caused deterioration of groundwater quality in the past.
- To reduce and eventually negate the need for additional Granular Activated Carbon (GAC) treatment at the Etton abstraction.
- To support the EA in their objectives to complete the active remediation element of the Helpston Project within 30 years (commencing 2006).
- To return the status of the Welland Limestone Unit groundwater body under the Water Framework Directive to Good.
- To accelerate removing the contaminant linkages that led to the determination of the site as 'Contaminated Land' and a 'Special Site' under Part 2A of the Environmental Protection Act 1990.

Additional questions / points raised by AWS that will need to be considered when evaluating remedial options include:

- Who will ultimately own and maintain any asset that is created as part of any remediation solution?
- What happens if the asset fails?
- Cost / benefit will be a critical factor
- Anticipated timescale for installation, operation and discernible benefits of any solution.

Remedial Targets

In addition to the previous studies that have served to model and calculate Remedial Target Values (RTVs) for mecoprop further data on a large range of persistent organic pollutants and hazardous substances outlined in the Water Framework Directive will be available for consideration. This separate 2021/22 study will involve extensive sampling and analysis at a number of waste facilities including Helpston. The results are expected to become available early to mid-Summer.

Assuming this data is available in reasonable time and the overall project deadline is not impacted - it is expected that the new data being generated (plus previous reports) will be carefully reviewed and the approach to deriving the RTVs fully researched and validated.

It may be the case that additional RTVs needs to be modelled and derived as part of this study depending on the strategy put forward by the appointed consultant.

The current recommendation is to achieve a remedial standard that would ultimately reduce mecoprop concentrations at the AWS Etton abstraction borehole to less than 0.1 µg/l, i.e. compliant with Drinking Water Standards – that is under normal groundwater conditions (excluding drought). This standard of remediation is referred to as the desirable standard in the Source Removal Summary Report (Ref.3).

Given the PR19 requirement to negate the need for treatment at Etton, one of the key objectives for any remedial strategy is an approach that results in the achievement of DWS standards at the AWS abstraction borehole.

Timeframes

The aim is to begin procurement for the design and build contract from 1st April 2022. The appointed contractor will be responsible for obtaining all necessary permissions and permits. The aim is to complete the work by 22nd December 2024. This deadline is currently linked to the AWS obligation under PR19 but this may be extended in specific circumstances. The client will provide further updates on this at the start up meeting.

Regulatory Controls

When considering the various remediation options, it is important to factor in any required regulatory controls, such as permits or licenses.

Most land contamination treatment activities will use one of the following:

- Standard Rules: [SR2008 No 27: Mobile plant for the treatment of waste soils and contaminated material, substances or products](#) and [mobile plant permit \(MPP2\)](#) deployment form
- A bespoke mobile plant permit for the treatment of waste soils and contaminated material, substances or products
- A site based permit for either the treatment, disposal or deposit for recovery

The regulatory rules in relation to dealing with waste materials will need to be explored. In addition, there may be other controls in relation to abstracting and/or discharging groundwater.

Quality Standards

It is expected the process employed to appraise remediation options suitable for this scenario is undertaken in a thorough and robust manner. Best practice and industry standard guidance should be fully utilised and referenced and the project **delivered in compliance with the National Quality Mark Scheme** and **signed off by a Suitably Qualified Person (SQP)**.

In addition to developing a scheme that is technically feasible, considers the specifics of the site, is durable, reasonable and meets regulatory requirements – it should also be clearly sustainable.

Remediation is not intrinsically sustainable and poorly planned projects can have serious negative impacts.

Sustainable remediation, whilst managing the unacceptable risks posed by the identified contaminants, can also help to ensure that the benefit of doing the remediation is greater than its impact. Any approach should consider the relative ability of each option to achieve the remedial objectives in a safe and timely manner whilst optimising the environmental, social and economic value of the work.

Key principles of sustainable remediation (from CL:AIRE, 2010):

- **Principle 1: Protection of human health and the wider environment.** Remediation should remove unacceptable risks to human health and protect the wider environment now and in the future for the agreed land-use, and give due consideration to the costs, benefits, effectiveness, durability and technical feasibility of available options.
- **Principle 2: Safe working practices.** Remediation works should be safe for all workers and for local communities, and should minimise impacts on the environment.
- **Principle 3: Consistent, clear and reproducible evidence-based decision-making.** Sustainable risk-based remediation decisions are made having regard to environmental, social and economic factors, and consider both current and likely future implications. Such sustainable and risk-based remediation solutions maximise the potential benefits achieved. Where benefits and impacts are aggregated or traded in some way this process should be explained and a clear rationale provided.
- **Principle 4: Record keeping and transparent reporting.** Remediation decisions, including the assumptions and supporting data used to reach them, should be documented in a clear and easily understood format in order to demonstrate to interested parties that a sustainable (or otherwise) solution has been adopted.
- **Principle 5: Good governance and stakeholder involvement.** Remediation decisions should be made having regard to the views of stakeholders and following a clear process within which they can participate.

- **Principle 6: Sound science.** Decisions should be made on the basis of sound science, relevant and accurate data, and clearly explained assumptions, uncertainties and professional judgment. This will ensure that decisions are based upon the best available information and are justifiable and reproducible.

The following guidance and initiatives should be explored and utilised in this study (not an exhaustive list):

- The SuRF-UK Framework for Assessing the Sustainability of Soil and Groundwater Remediation (CL:AIRE, 2010).
- Land Contamination Risk Management (Stage 2 – Options Appraisal) – which replaces 'Model procedures for land contamination (CLR11)' which has now been withdrawn.
- Part 2A of the Environmental Protection Act 1990 – Contaminated Land Statutory Guidance (2012)
- BS ISO 18504:2017: Soil quality. Sustainable Remediation
- [Landfill operators: environmental permits](#)

Options Previously Considered

A significant amount of work has already been undertaken on the former landfills at Helpston. This includes several phases of comprehensive site investigation and remedial trials followed by a preliminary evaluation of remediation options.

The 2015 Source Removal Summary Report (Ref.3) concluded that ex-situ treatment was the preferred remediation option. The selected strategy would involve excavation of the whole waste mass, followed by ex-situ treatment, and then backfill of the treated material into the resulting void.

However, further consideration of this approach deemed it not appropriate. It was originally assumed that the works could be undertaken using the CL:AIRE Definition of Waste Code of Practice (DoWCoP) but the EA subsequently clarified that DoWCoP was not applicable in this instance as the excavated material would still be considered waste. And as such it is outside the scope of DoWCoP

Accepting that the material to be deposited would still be classified as waste, another option was to explore the possibility of applying for a bespoke permit on the basis that the operation would comprise a Deposit for Recovery activity.

There are various tests and criteria to be met in order to demonstrate that using waste in this way can be classed as a recovery activity. One of the key elements is to demonstrate that the void would be filled with a suitable material, and that it makes sense to use waste materials excavated from the site rather than imported non-waste backfill materials. Demonstrating this type of 'substitution' plus the 'suitability' of the site won waste materials for this purpose would be crucial.

To demonstrate that the above would comprise a recovery activity and therefore a deposit for recovery permit would be appropriate, further discussions were held within the EA. And in parallel a more detailed assessment of the nature and composition of the waste materials was undertaken to help inform the discussions around deposit for recovery.

In order for deposit for recovery to be a suitable mechanism to facilitate ex-situ remediation it must be the case that only the recovered waste that is similar in its chemical and physical nature to a suitable non-waste can be replaced in the void in order to meet the substitution test. More recent evaluation of waste composition has indicated approximately 50% of the excavated material would be unsuitable for this purpose. Therefore, a significant amount of material for backfill would need to be imported to restore the site to an acceptable level.

The costs associated with **ex-situ remediation** on the basis that nearly 50% of the waste mass would need removal from site and considering a significant proportion would be classed as hazardous, means this option is **not a reasonable option under Part 2A on both sustainability (environmental impact of traffic movements etc) and cost grounds**. The EA currently believe that the hazardous component is likely to be in the range of 5 to 10%.

Of the various other methodologies that were shortlisted, the recently run options appraisal exercise concluded that an **encapsulation type solution might be viable**. This would comprise enhanced capping together with a cut-off wall. It was determined that this approach would be both effective and durable, but only for the life of the installation - nominally considered to be 100 years. However, because this technique does not involve removal or treatment of the contaminant source, leaching has the potential to re-occur in the future.

As a result of these more recent site assessment works, there is now more information available in relation to remediation at Helpston and what is and isn't viable. This study is to build on that work and **not to revisit** techniques that are clearly not suitable. This study should consider the findings and conclusions of these previous assessments, and undertake an in-depth assessment of the **feasible** options, develop a shortlist and ultimately select an approach that meets all associated requirements.

The final output should provide adequate justification for the selected approach to enable the EA, as lead regulator, to fully understand the rationale leading to shortlisting and final selection. The shortlisted option should be assessed for cost benefit and sustainability, and able to address the concerns raised by AWS. The design and description of the selected technology should be sufficiently comprehensive to enable the EA to move directly into the next phase of project commissioning.

Under separate contract, the selected remedial treatment action will then be developed into a design and build programme of works.

NOTE: *In order to validate the shortlisted and final approach, and to ensure both technical and commercial viability, it is highly recommended that the designs and suggested methodologies are reviewed and critiqued by specialist remediation contractors. This **early contractor involvement** will ensure the selected techniques and technologies have been subject to expert ground truthing covering all technical, regulatory and commercial aspects.*

3. The Services and Deliverables

Project Overview / Objectives

To build on works already undertaken at the Helpston site, including previous remedial options appraisals, with a view to shortlisting and ultimately identifying the most suitable and sustainable remediation strategy that meets all associated criteria and objectives.

Activity Schedule

- **Task 1. Start-up workshop to discuss approach and refine the scope**

A virtual workshop which will enable the EA to provide a background to the project and the overarching aims and objectives. The consultant will then present their scope of works and their understanding of the commission as well as additional thoughts for scope enhancement.

Information requirements / provision will be discussed. Detailed discussion and critical evaluation of the approach will help refine and enhance the overall strategy.

- **Deliverable: A refined specification to include all comments and suggestions from the start-up workshop**

- **Task 2. Collate and review all information pertinent to development of a comprehensive remediation options appraisal for the Phase 2 source removal/ treatment - and finalising the strategy for a robust appraisal of highlighted options**

As indicated, a significant amount of work has been undertaken at Helpston over the years. Key pertinent documents and reports have been included with this tender pack, and any others will be provided at project start-up.

The appointed consultant will be expected to review all supporting information in order that they fully understand the site history, the nature of the problem and the objectives associated with site remediation – taking into consideration technical and regulatory constraints and stipulations and the conclusions of other risk mitigation appraisals which have served to rule some options out.

It is not expected that additional on-site investigation works will be necessary to facilitate robust delivery of this commission.

As indicated above, we would expect the appointed consultant to thoroughly review the previously derived RTVs and consider the requirement for further modelling and development of additional values if this is deemed necessary to aid the evaluation and ultimate selection of feasible options.

- **Deliverable: A summary of nature and extent of the problem, the key objectives underpinning this remediation options appraisal and the rationale to be employed in the selection and screening of associated technologies**

- **Task 3. To identify a selection of valid technologies (or combination of technologies) that will meet the agreed objectives**

To advance the findings from previous studies and using a best practice approach to identify and evaluate a selection of remedial technologies that may be suitable in this scenario. Early discussion with expert contractors will be beneficial when selecting appropriate techniques.

- **Deliverable: Following review of all information and research into valid remediation technologies, delivery of a long list of viable options**
- **Task 3a. To refine the long list down to a short list of options – with all requirements and criteria considered and offered the appropriate weighting**

Employing the rationale and approach agreed under Task 2 to refine the initial list of possible and plausible remedial options that will meet the agreed objectives in accordance with stipulated criteria.

Using a clear, sound and suitably robust approach to screening highlighted technologies resulting in delivery of a relevant shortlist of feasible options. To include justification for selection with clear reasoning for inclusion or rejection. Early discussion with expert contractors is likely to be beneficial when refining the list of techniques.

The short list of options must all meet the remediation criteria and objectives as listed above.

- **Deliverable: Further evaluation and refinement of the long list of options delivering a shortlist to be taken forward for more in-depth consideration**
- **Task 3b. To select the most suitable option (or combination of options) that meet the overarching requirements for this project – utilising the expert input of a specialist contractor to assist with the shortlisting and validation**

Reducing the shortlist down to the selected approach (or combination of options) that meet the key criteria. To include justification for selection with clear reasoning for inclusion or rejection.

It is likely this will require groundwater modelling to demonstrate the selected remedial approach will meet the appropriate (and validated) remedial target values and, if a landfill permit is required, it will also need to meet the completion criteria to surrender the landfill / deposit for recovery permit.

Utilise expert advice from a specialist contractor to assist with considerations of sustainability, practicability, effectiveness and durability. This should also include regulatory requirements and the associated commercial aspects taking into account – design, licensing / permitting requirements, enabling works, implementation and post install monitoring and validation.

- **Deliverable: Further evaluation and refinement of the shortlisted options delivering the selected option (or combination of options) with associated justification**
- **Task 4. Draft reporting**

A draft report pulling together all the elements from the preceding project activities. To facilitate comprehensive review by the EA project team. The EA will provide one set of collated comments for discussion that will ultimately enable development of the final report.

- **Deliverable(s): A draft report for comment**

- **Task 5. Close-out**

A virtual workshop that will enable the consultant to present all works undertaken and outputs generated. To facilitate comment and critical review on the draft report and for the consultant to feedback on EA comments.

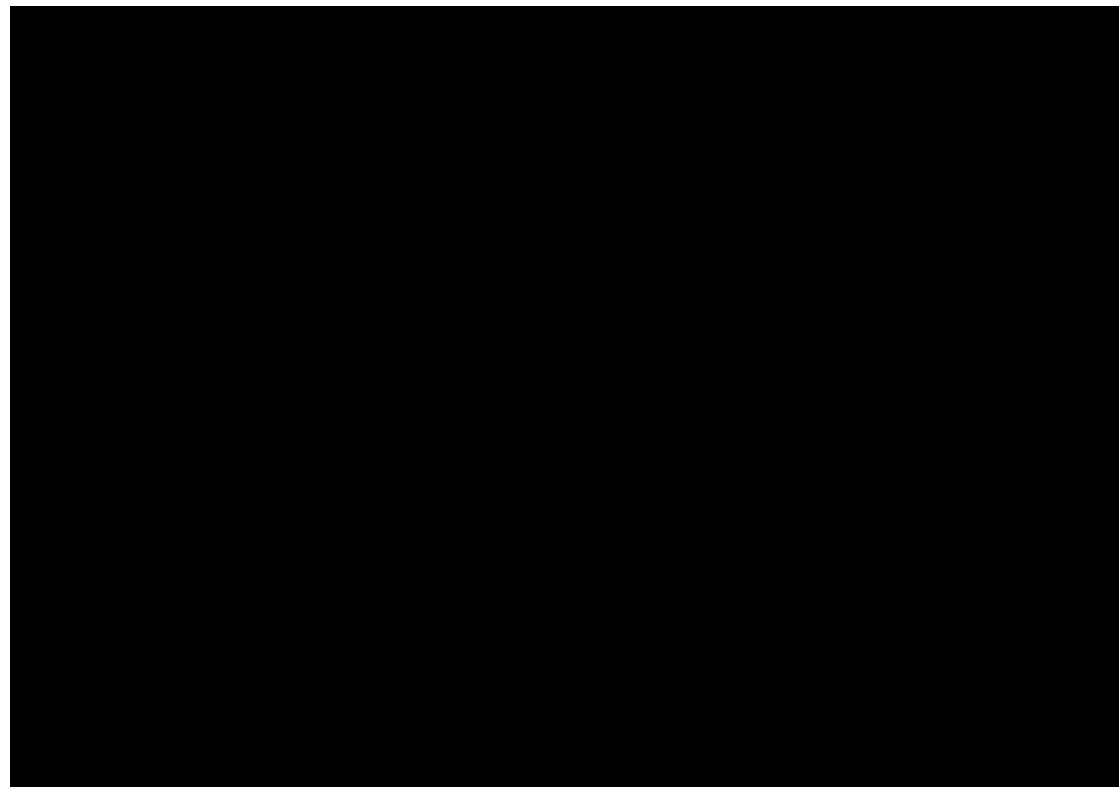
- **Deliverable(s): A successful close-out meeting that enables discussion relating to all deliverables and facilitates delivery of the final report**

- **Task 6. Final reporting**

Delivery of the final report including all agreed amendments.

- **Deliverable(s): A final report – to include a sufficiently detailed specification of the chosen option, including any recommendations for additional data requirements (data gaps), that will enable the EA to progress the procurement of a design and build contract**

Management/ EA Project Governance



The EA Project Manager will be directly responsible for delivery of the commission and will be the primary point of contact for the Supplier. The Project Manager will ensure the project remains on target, all key milestones are met, and the ultimate product meets the required quality standards.

It is highly likely that the Supplier will need direct and frequent contact with the EA Technical Advisors. The Advisors from the EA Area team who have an in-depth knowledge of the site and the associated issues, will be key points of contact. In addition, EA Technical Advisors who specialise in landfill and waste licensing matters will be crucial to this process.

It is anticipated that the supplier will use their experience and expertise pertaining to landfill, waste, contaminated land and remediation. In addition, to call upon the capability and delivery experience from remediation contractors who will help to rationalise the shortlist of technologies and help ensure the selected strategy, or package of techniques, meets all identified success criteria.

Weekly updates are required plus monthly progress reporting. The reporting template will be clarified at start-up.

Meeting Requirements:

- **Start-up meeting**

The start-up meeting will be held within two weeks of contract award. All key project team members from the client and supplier side will be expected to attend. The meeting is likely to be via video conference unless a relaxation in COVID restrictions facilitates a face-to-face meeting.

- **Review meetings**

Project review meetings will be held at key milestone stages, as indicated in the activity schedule, plus on any other occasion as deemed necessary by either of the respective project managers.

- **Poor Performance Meeting**

Respective team performance will be under constant review with any issues discussed as and when they occur. Overall performance and lessons learnt will form part of the close out meeting.

3. DELIVERABLES

The following outcomes will be delivered:

Task	Task Summary	Deliverable	Deliverable Summary	Indicative Due Date
Contract Start Date				24/05/21
Task 1	Start-up workshop to discuss approach and refine the scope	Deliverable 1	A refined specification to include all comments and suggestions from the start-up workshop	Workshop to be held within 2 weeks of the Contract Start Date
Task 2	Collate and review all information pertinent to development of a comprehensive remediation options appraisal for the Phase 2 source removal/ treatment - and finalising the strategy for a robust appraisal of highlighted options	Deliverable 2	A summary of nature and extent of the problem, the key objectives underpinning this remediation options appraisal and the rationale to be employed in the selection and screening of associated technologies	
Task 3	To identify a selection of valid technologies (or combination of technologies) that will meet the agreed objectives	Deliverable 3	Following review of all information and research into valid remediation technologies, delivery of a long list of viable options	
Task 3a	To refine the long list down to a short list of	Deliverable 3a	Further evaluation and refinement of the long list of	

	options – with all requirements and criteria considered and offered the appropriate weighting		options delivering a shortlist to be taken forward for more in-depth consideration	
Task 3b	To select the most suitable option (or combination of options) that meet the overarching requirements for this project – utilising the expert input of a specialist contractor to assist with the shortlisting and validation	Deliverable 3b	Further evaluation and refinement of the shortlisted options delivering the selected option (or combination of options) with associated justification	
Task 4	Draft reporting	Deliverable 4	A draft report for comment	2 weeks before close out meeting
Task 5	Close-out	Deliverable 5	A successful close-out meeting that enables discussion relating to all deliverables and facilities delivery of the final report	Minimum of 2 weeks before final report is due
Task 6	Final reporting	Deliverable 6	A final report – to include a sufficiently detailed specification of the chosen option, including any recommendations	Minimum of 2 weeks prior to Contract End Date

			for additional data requirements (data gaps), that will enable the EA to progress the procurement of a design and build contract	
Contract End Date				24/01/22

4. RESOURCES
(4.1) Staff of the Consultant to be involved in the provision of the Services The following people will deliver the Services: 
(4.2) Resource Schedule See Resource and Pricing schedule attached at Annex 2 for a breakdown of Key Personnel by activity.
(4.2) Sub-contractors to be involved in the provision of the Services No sub-contractors have been identified in the Consultants bid. <i>(See clause 31 of the Framework Contract)</i>

5. PROGRAMME

The Services will be delivered in accordance with the programme attached at Annex 1

6. FEE

(6.1) LUMP SUM FIXED

See Annex 2 – Resource and Pricing Schedule from Consultant response to the Public Sector Body's brief for a full cost breakdown. This relates to the specific work items set out in the Public Sector Body's brief and will be payments will be made according to the agreed payment plan outlined below;



7. INVOICING AND PAYMENT

Invoices in respect of the Instruction will only be processed for payment by the Public Sector Body where:

- (a) they are for the current Instruction;
- (b) the current Environment Agency Reference Number is quoted on the invoice; and
- (c) invoiced in accordance with Schedule 2 of the Framework Contract
- (d) the invoice is addressed to Environment Agency

Payment will be made to the Consultant by Environment Agency.

8. SPECIAL CONDITIONS

(7.1) Clause 32 Limit of Liability shall be amended as follows;

The Consultant's total liability to the Public Sector Body for all matters arising under or in connection with this instruction, other than the unlimited matters referred to in clause 36 of the Framework Contract, is limited to £5 million in the aggregate.

(7.4) Any other special requirements of the Public Sector Body

Termination and Exit

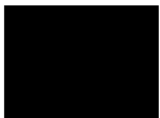
The Consultant is required to provide an Exit Plan for the Commission, which should include provision for planned and unforeseen Exit. The Agency requires the Consultant to make provision to transfer all Agency owned Data which has been shared with the Consultant for use in this Contract.

The Consultant is required to provide the Agency with a copy of their Business Continuity Plan before the Contract Start Date.

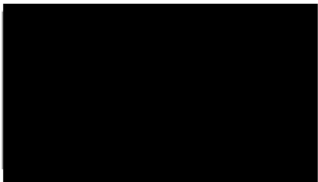
BY SIGNING AND RETURNING THIS INSTRUCTION THE CONSULTANT AGREES it is entering into a legally binding contract for the Consultant’s appointment (the “Consultant Appointment Contract”) with the Public Sector Body to provide the Services. The Consultant Appointment Contract incorporates and is subject to all of the terms and conditions contained in the Framework Contract as may be varied and/or amended by the other provisions of this Instruction. If there is any inconsistency between any of the provisions of this Instruction and the provisions of the Framework Contract, the provisions of this Instruction shall prevail).

The Consultant and the Public Sector Body hereby acknowledge and agree that they have read this Instruction and the Framework Contract and by signing below agree to be bound by the terms of this Consultant Appointment Contract from the date appearing at the start of this Instruction.

For and on behalf of the Consultant:

Name and Title	
Signature	 Authorised signatory on behalf of AECOM

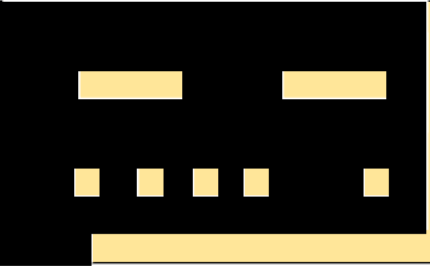
For and on behalf of the Public Sector Body:

Name and Title	
Signature	

Annex 1 - Programme

Task No.	Steps	Sub-Tasks	Completion Date
Task 1 - Kick-off meeting			01/06/2021
Task 2 - Collate and review all information pertinent to development of a comprehensive remediation options appraisal for the Phase 2 source removal/treatment - and finalising the strategy for a robust appraisal of highlighted options			
Key Milestone			
		06/07/2021	

Task 3 - To identify a selection of valid technologies (or combination of technologies) that will meet the agreed objectives	Key Milestone		03/08/2021
Task 4 - Draft reporting	Reporting	Draft report for comment	09/11/2021
	Key Milestone		30/11/2021

Task 6 - Final reporting	Completion Milestone		21/12/2021
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■ [REDACTED]

■ [REDACTED]

