**Request for Quotation**

**Ref: ENV0001002**

**Title: Cotswolds Groundwater Model Update and Refinement**

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# Introduction to the Environment Agency

**Who is the Environment Agency?**

We are an Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs. Our principal aims are to protect and improve the environment, and to promote sustainable development.

Further information on our responsibilities, Corporate Plan and how we are structured can be found on our Website.

<https://www.gov.uk/government/organisations/environment-agency/about>

**What do we spend our money on?**

We are a major procurer of goods and services within the UK, spending circa £600M per annum, our major spend areas are:

* Flood and Coastal Risk Management (design, construction and maintenance)
* ICT and Telecommunications
* Vehicles and Plant
* Environmental Consultancy and Monitoring
* Temporary Staff and Contractors
* Facilities Management, Energy and Utilities
* Flood Management and Water Related Services

**What do we need from our suppliers?**

Suppliers are vital in supporting the delivery of our corporate plan. We aim to support the economy and society whilst delivering more environmental outcomes for every pound we spend. In many areas we are leading the way on environmental and technical developments. It is our role to ensure that suppliers clearly understand our corporate aims and objectives and know that we are committed to delivering the best value most sustainable solutions, taking into account the whole life cost of our procurement decisions. We promote diversity and equality and treat all of our suppliers fairly.

Our procurement strategy may be of interest to you as a potential supplier. It sets out our priorities and key commitments in a range of areas such as delivering our corporate plan, Government policy, supplier management and sustainable procurement:

<https://www.gov.uk/government/organisations/environment-agency/about/procurement#procurement-strategy>

**Government changes and collaboration**

Since 1 April 2013, the Environment Agency is no longer responsible for delivering the environmental priorities of Wales. This is now the remit of Natural Resources Wales (NRW).Further information can be found here:

<http://naturalresources.wales/splash?orig=/>

By bidding for this requirement, you may also be approached by other members of the Defra network, NRW or other government departments that are specifically named in the tender document.

**Further information**

For further information and to see our commitments to Diversity and Equality, please visit our website.

<https://www.gov.uk/government/organisations/environment-agency/about/procurement>

https://www.gov.uk/government/organisations/environment-agency/about/equality-and-diversity

Also, are you up to date on environmental legislation? See links below for further information.

Waste and Environmental Impact - <https://www.gov.uk/browse/business/waste-environment>

Environmental Regulations - <https://www.gov.uk/browse/business/waste-environment/environmental-regulations>’

# Contract and Tendering Process

## Contract Length

It is anticipated that this contract will be awarded to one supplier for a period of six months to end no later than 31st March 2020. Prices will remain fixed for the duration of the contract award period. We may at our sole discretion extend this contract to include related or further work. Any extension shall be agreed in advance of any work commencing and may be subject to further competition. Any amendment to contract prices for the extensions are to be by negotiation.

The Environment Agency Conditions of Contract for Services (Section 10) shall apply to this contract.

This contract shall be managed on behalf of the Agency by the Project Manager, Victoria Fry (victoria.fry@environment-agency.gov.uk).

## Contact Details and Timeline

Victoria Fry will be your contact for any questions linked to the content of the quote pack or the process. Please submit any questions by email and note that both the question and the response will be circulated to all tenderers. You can contact Victoria by the contract details below:

E-mail: victoria.fry@environment-agency.gov.uk

Telephone: +442030259789

Key elements of the process have been reviewed. Anticipated dates for planned activities are below:

|  |  |
| --- | --- |
| **Activity** | **Due Date** |
| Supplier responses for Request for Quote | 20th September 2019 17:00  |
| Evaluation of Request for Quote submissions | 27th September 2019 |
| Period for Clarifications | 04th October 2019 |
| Award of contract | 11th October 2019 |
| Project/Contract end date | 31st March 2020 |

It should be noted that these timescales and activities may be subject to change.

# Evaluation Criteria

We will award this contract in line with the most economically advantageous tender (MEAT) as set out in the following award criteria:

* Price – 60%
* Quality – 40%

The following quality criteria are weighted in accordance with the importance and relevance attached to each one:

|  |  |
| --- | --- |
| **Sub-Criteria** | **Weightings** |
| Skill, experience and adequacy of resources of technical staff. Experience of similar projects | 30% |
| Methodology | 40% |
| Delivery to time and budget | 30% |

The criteria listed above will be assessed on a 0 to 10 basis and will reflect the following judgements:

| **Rating of Response****The tenderer provides a response which in the opinion of the evaluators is:**  | **Score** |
| --- | --- |
| **Excellent:** Addresses all of the requirements and provides a response with relevant supporting information which does not contain any weaknesses, giving the Agency complete confidence that the requirements will be met. | 10 |
| **Very Good:** Addresses all of the requirements and provides a response with relevant supporting information, which contains very minor weaknesses, giving the Agency high confidence that the requirements will be met. | 8 |
| **Good:** Addresses all of the requirements and provides a response with relevant supporting information, which contains minor weaknesses, giving the Agency reasonable confidence that the requirements will be met.  | 6 |
| **Satisfactory:** Substantially addresses the requirements and provides a response with relevant supporting information which may contain moderate weaknesses, but gives the Agency some confidence that the requirements will be met.  | 4 |
| **Weak:** Partially addresses the requirements, or provides supporting information that is of limited relevance or contains significant weaknesses, and therefore gives the Agency low confidence that the requirements will be met. | 2 |
| **Nil:** No response or provides a response that gives the Agency no confidence that the requirements will be met.   | 0 |

All quality sub-criterion is subject to a minimum threshold score of 6 marks out of the possible 10 available. Scoring will be concluded following the review of your bid. If a score of 6 is not achieved, the response will be deemed non-compliant and your tendered bid will be disqualified for failing to meet minimum requirements.

**Skill and Experience – 30%**

The proposal demonstrates that the project team includes staff with the relevant experience, appropriate technical expertise, qualifications and experience to add significant value and confidently deliver the project outcomes. The proposal demonstrates that the team structure has appropriately experienced and qualified staff to undertaking the work, with sufficient supervision and review.

*The proposal shall include CVs for the staff that will be undertaking the works.*

*The proposal shall demonstrate your experience of carrying out groundwater modelling projects*

**Methodology – 40%**

The proposal provides confidence in the tenderers methodology and approach. It demonstrates that the tenderer has a detailed understanding of the key project issues and the skills required to deliver the services/works specified in the scope/works information. The response provides confidence that the tenderer has a well-developed appropriate plan for managing and delivering the outcomes in the scope/works information.

*The proposal shall provide a methodology presenting how to deliver each of the modelling objectives and tasks within the specification.*

**Delivery to Time and Budget – 30%**

The programme provides confidence that the approach is both realistic and flexible, allowing appropriate time for each element to be completed to meet the contract/project milestone dates.

The proposal demonstrates key risks associated with all aspects of work have been appropriately assessed and appropriate control measures have been identified. A proactive approach is evident to monitoring and managing risk for the project lifecycle.

*The proposal shall include:*

* *a detailed project plan identifying key milestones, timescales and outputs.*
* *assessment of the key risks & mitigation measures that need to be managed through the project in regards to timescales*
* *details on how communication is maintained with the employer to ensure regular meetings /updates are provided and risks to time and budget raised for mitigation.*

# Information to be returned

**Please note, the following information requested must be provided. Incomplete tender submissions may be discounted.**

Please complete and return the following information:

* completed Pricing Schedule (Appendix A);
* completed Prior Rights Schedule (Appendix B);
* confirmation that terms and conditions are accepted (Appendix C). **Please note** that the terms cannot be amended later.

Please provide a proposal that:

* include CVs for the staff that will be undertaking the works
* demonstrates your experience of carrying out groundwater modelling projects
* provides a methodology presenting how to deliver each of the modelling objectives and tasks within the specification (Section 5)
* includes a detailed project plan identifying key milestones, timescales and outputs.
* assesses key risks and mitigation measures that are need to be managed through the project in regards to timescales
* details on how communication is maintained with the employer to ensure regular meetings /updates are provided and risks to time and budget raised for mitigation.

**Please note** the proposal should be a separate document to the returned Pricing Schedule. This ensures that the proposal can be easily sent to members of the Agency project team to set quality scores without cost information included.

# Specification

## Project Objective

The Cotswolds Groundwater model period is extended and refined to improve the model’s calibration, allowing more accurate representation of the current state of the Cotswolds aquifer.

## Summary of Cotswolds Groundwater Model

The Cotswolds comprise a series of Oolitic limestone aquifers that support a number of public water supplies, water courses and wetland sites. The geology and hydrogeology of the area is complex. In 2011 works started on the development of a groundwater model that would provide a sound evidence-based tool to support the strategic assessment of the available water resources and water abstraction licensing decisions in the Cotswolds.

Conceptual development of the model started in October 2011 with numerical modelling completed and reported on by July 2013. This model was also external reviewed. The Frome Catchment Study, completed in 2018, noted an error in the flow routing in the Frome Catchment. This was corrected and amended copy of the model supplied to the EA in 2018. The model extent is presented in Figure 1 and basic details of the model is shown in Table 1.

**Table 1 Cotswolds Groundwater Model Overview**

|  |  |
| --- | --- |
| Item | Notes |
| Period | 01 Jan 1970 to 26 Dec 2010 |
| Stress Periods  | Each month is split in to six stress periods of five days, with last stress period adjusting the month length.  |
| Recharge Model | 4R, which is a larger model extent than the groundwater model (see Figure 1) |
| Model Code | MODFLOW96-VKD, though VKD is inactive within the model |
| Grid | 140 rows x 251 columns at a regular 250 m x 250 m cell size |
| Layers | Layer 1 - Oxford ClayLayer 2 - Cornbrash and Forest MarbleLayer 3 - Great OoliteLayer 4 - Inferior Oolite  |
| Available Standard Scenario Runs | HistoricNaturalised Fully LicencedRecent Actual  |
| Current Run Time  | 4 hours for 4R model and 4 hours for MODFLOW model |

**Figure 1 Overview of Cotswolds Groundwater Model**



The Cotswolds groundwater model currently ends in 2010. To keep the model up to date both in terms of capturing recent year’s climatic conditions and local abstraction licence changes the model requires updating.

The model has been used extensively for Catchment Abstraction Management Strategies (CAMS) and our Water Framework (WFD) investigations and will be required for further investigations and appraisal work in to the future. As a tool in regular use it needs consistent updates to keep it current and fit for purpose. From using the model since it was delivered in 2013, some model refinement to improve its calibration has been identified.

An updated model is needed to support reviews of Water Resource Management Plan (WRMP) options, River Basin Management Plan (RBMP), development of abstraction licensing strategies, review of permit applications as well as the foundation for Source Protection Zone (SPZ) development.

## Project Team

The project team will be a technical project group formed of the following parties:

* Consultants delivering the model update and refinement
* Environment Agency staff involved with the project
* Water Company representatives with an interest in the work
* An External Reviewer contracted by the Environment Agency after completion of this tendering process

## Data available for project

The Environment Agency and Water Company members of the project team will aim to provide the data sets outlined in Table 2. The majority of the Environment Agency datasets will be uploaded to the Environment Agency’s sharefile site within the first week of the project.

**Table 2 Data Sets Available for Model Update and Refinement**

| **Data Set** | **Description and notes on available dataset**  |
| --- | --- |
| Abstraction details and returns  | Monthly abstraction returns will be provided to enable update of the surface water and groundwater abstractions within the model area in an excel worksheet format. This will include a list of licence changes within the model (new licence, revocations etc). This dataset will have a period of overlap with the end point of the current model and extend to March 2019. Public Water Supply returns will be reviewed by the Water Company to ensure that they are correct compared to their records. This reviewed dataset will also be provided.Some recent project work in the Frome catchment has identified better characterisation of how groundwater abstractions are constructed, which will be provided, which will aid improvement as to how some abstractions are characterised in the model.  |
| CAMS  | There are eight CAMS ledgers that cover the model area, which will hold Recent Actual, Future Predicted and Fully Licenced values for abstractions and discharges. These can be provided as well as a Water Resources GIS (WRGIS) export for abstractions and discharges within the model area.  |
| Discharges  | Discharges within the model have been developed based on a combination of consent information, CAMS ledger data and estimates of dry weather flow (DWF) based on measured effluent discharges between 2005 and 2010. New effluent returns up to Dec 2018 with a period of overlap with the original dataset will be available in an excel worksheet format. Information on new or revoked discharges will also be provided. We are currently in discussion with the water company as to information available on water use within the model area and where abstracted water may be routed to particular sewage treatment works. This data will be provided if available.  |
| Groundwater Levels  | Groundwater level data for existing calibration sites and a collection of new boreholes that are currently not captured as calibration targets will be provided up to the point of the data export from the WISKI database within a excel worksheet format. This will include monthly dip data and hourly logger or telemetry data where available.Due to a transfer of hydrometric data from WISKI6 to WISKI7, there may be errors in groundwater levels in WISKI 7 exported data due to transcription errors associated with below ground level and meter above ordnance datum levels. Correction of identified errors during observed groundwater level update will likely need to be undertaken by the consultant, though the Environment Agency will be responsible to updating these errors in WISKI7.  |
| River Flows  | Mean daily flows within from WISKI will be provided in an excel worksheet format for each flow site within the model. It is anticipated that this dataset will have a period of overlap with the end point of the current model and extend to the point when the data is exported from WISKI. Gauging stations undergo quality assurance every five years. Updates in Gauging Station Data Quality records where these have changed since the model was last calibrated will be provided where available.   |
| Spot flow data | There are a number new spot flow sites and data that has been collected by the EA and possibly the Water Company within the Thames area of the model. What data is available will be provided within a excel worksheet format.  |
| Rainfall  | Rainfall data in to the recharge model is based on continuous estimation of rainfall (CERF) also referred to as 1-GRID data. Currently EA only has access to CERF data to the end of 2013. Therefore this dataset will be extended with the EA’s Daily Rainfall Tool to produce data in the same gridded format as the 1-GRID data. Data will be provided with a period of overlap with the original rainfall data.  |
| Potential Evaporation  | The current model uses areal estimate of potential evaporation generated by the Thames Catchment Soil Moisture model. This data with a period of overlap with the model end point will be provided in excel worksheet format from WISKI and will include daily totals updated to month end at the point of data export.  |
| Survey Data | From the project files, it is uncertain if topographic survey data for the Cotswolds was provided to the original project team. A review of what data is available indicates for most of the main rivers within the model (eg Thames, River Churn etc) there are linear surveys, which can be provided. The format of this data would be a mixture of tiff image files, DWG files, pdf files, txt files and excel files depending on the date of the survey. Other data that will be provided includes the surveying of a number of observation boreholes in the Cotswolds areas, where the datum’s for some sites have changed.   |
| Cotswolds Groundwater Model Files  | The latest version of the recharge and groundwater model with relevant pre and post processing worksheets, run logs and utilities will be provided, along with relevant GIS files.  |
| Reports  | A selection of reports relevant to the River Frome, River Churn and Ampeny Brook that have been produced since the original model was delivered and explore how the groundwater model performs in this catchments can be made available at the start of the project. Pumping test reports and data for testing of current and new abstraction sites since the original model was delivered can also be made available.  |

Other datasets may become available as the project progresses.

## Outline Modelling Objectives and Deadlines

The overall modelling objectives are to:

* To extend the groundwater model and scenario runs from their current end date of 2010 to March 2019
* Improve how effluent discharges are characterised within groundwater model scenarios
* Develop a Future Predicted scenario run as part of the standard model scenarios
* Review and improve groundwater level and river flow representation in the model for the River Churn and Ampeny Brook catchments
* Reduce model runtimes where possible without worsening model calibration

All works will need to be completed by the 31st March 2020.

## Specific Task Objectives and Deliverables

**Task 1: Update Recharge and Groundwater Model**

**Purpose:** To extend the recharge and groundwater model from its current end point of December 2010 to March 2019 with relevant updated and validated datasets.

This task will require extending the current 4R and MODFLOW model input and output files from 2010 to 2019 for all standard scenarios (Historic, Naturalised, Fully Licenced and Recent Actual). This includes updating climatic and artificial influence datasets as well as observed data (groundwater levels and river flows as time series and accretion profiles where new data is available). Data provided by the Environment Agency or Water Companies may have errors that will need to be identified and corrected before being used within the model update. Some data sets such as observation borehole datums may have changed compared to those within the current model datasets.

It should be noted that this project shall not convert the model code from MODFLOW96 to MODFLOW6, nor update the current National Groundwater Modelling System (NGMS) configuration to account for the model update and refinement.

**Task Outcomes and Deliverables:**

* Updated and validated datasets supporting the model from 2010 to 2019
* New monitoring sites included as new calibration targets
* Historic abstraction sequences and characterisation in the model match water company records
* Updated pre and post processing spreadsheets, 4R and MODFLOW input and output files.

**Task 2: Review of Public Water Supply Abstractions and Effluent Discharge relationships**

**Purpose:** To link the historic and scenario discharges to public water supply use within the model area

As abstraction increases within the model area, this in reality will be returned in part to some sewage treatment works within the model area. Currently the model uses historic discharges within the fully licenced scenario. Currently there is no link between the two and modelled increase in abstraction results in a conservative assessment of impacts as discharges don’t increase with increased abstraction. This task would develop a means of linking effluent discharges to public water supply abstractions that provide water supply to the model area and are then directed to local sewage treatment works within the model.

**Task Outcomes and Deliverables:**

* Effluent discharges within the model are linked to public water supply abstractions and change in response to scenario abstraction rates such as Fully Licenced.

**Task 3: Develop a Future Predicted Run**

**Purpose:** To produce a new standard scenario run that accounts for predicted growth in abstraction and discharges

The risk of deterioration under WFD has been based on future predicted abstraction profiles, which is based on industry growth estimates. If the model is to be used for these investigations in the near future, then part of the standard scenario runs needs to include a future predicted scenario. As such, this task will develop such a scenario within the groundwater model.

**Task Outcomes and Deliverables:**

* Future Predicted scenario included within the groundwater model

**Task 4: Model Review and Refinement**

**Purpose:** To improve groundwater level and river flow representation in the model

The groundwater model will be used for future investigation work between 2020 and 2021, with a particular focus on the River Churn and the Ampney Brook. Currently groundwater level calibration in these areas range from good to poor while flows are a poor in the lower reaches of the Ampney Brook and some sections of the River Churn.

A number of large public water supply abstraction from the Great and Inferior Oolite were reduced between 2004 and 2006 due to preceding low flow investigations. The Environment Agency has reviewed how the last few years of the existing groundwater model (i.e. between 2007 and 2010) captures groundwater level recovery in response to licence reductions. Though of a limited period of record, the review concluded that groundwater recovery within the unconfined sections of the Great and Inferior Oolites for the Churn and the Ampney Brook catchments was not captured well.

In some part of the model such as the vicinity of Meysey Hampton there is too little groundwater level recovery, which may be in part due to the current parametrisation of some of the complex faulting in the area, which are represented as Horizontal Flow Barriers within the model. There is also uncertainty about leakage contributions across the Fuller’s Earth (represented as a pseudo layer between Layer 3 and Layer 4 in the groundwater model) and if this is a significant contributor or not to groundwater level change and calibration within the Great and Inferior Oolites.

The Ampney Brook groundwater level calibration does make an impact on the modelled flows and recovery to abstraction changes, with the model under estimating the flow recovery observed. The review also identified a number of tributary misconnections within the Lower Churn that will need to be amended. This does mean that there are uncertainties when using the groundwater model to estimate scenario impacts from Great Oolite abstractions in particular.

Stream stage for rivers within the model has been derived either on 1 m Lidar data or 10 m Digital Terrain Model (DTM) data. For the majority of the main rivers within the model there are linear survey data which may aid review of the River Churn and Ampney Brook.

There will also be a collection of pumping test reports and data that have been carried out since the original model was delivered that may aid model refinement.

**Task Outcomes and Deliverables:**

* + Improved calibration of groundwater levels and flows within the Ampney Brook
	+ Improved calibration of groundwater levels and flows within the River Churn
	+ Improved representation of groundwater level and river flow recovery in response to licence changes.

**Task 5: Improving Model Run Times**

**Purpose:** To reduce runtimes of the 4R and MODFLOW model

Environment Agency national groundwater modelling strategy recommends that the run times for regional groundwater models should be less than six hours. Currently it takes approximately four hours to run the 4R model and four hours to the run the MODFLOW model. By extending the model period by almost ten years, it is likely that runtimes will increase to 5 hours. It would be advantageous to consider how to reduce run times and implement where options do not lead to a worsened calibration. This will mean that the model could be run more quickly on Environment Agency’s machines as well in NGMS when the model is configured for NGMS in the future.

**Task Outcomes and Deliverables:**

* 4R and MODFLOW runtimes for the extended model are reduced if deemed feasible without worsening model calibration.

**Task 6: Reporting and Model Delivery**

**Purpose:** To present work carried out, reasoning for decisions made, outcomes of updated model and to provide a working copy of the model to the Environment Agency.

The model report is intended primarily for internal use by the Environment Agency. Under the Environmental Information Regulations (EIR) 2004, copies of the report or model files will be made available to those that request it, such as Water Companies, consultants or members of the general public. As such confidential or personal information should not be included within the report, nor should location details of public water supplies, as the report may be at some point be released into the public domain.

A check list of files that should be delivered for groundwater modelling projects is outlined in the South East Groundwater Modelling Unit’s *Consultants Deliverables for modelling studies – checklist guide* (May 2019), which is included in Appendix D. Not every check item applies to this project (for example NGMS configuration), but the majority would have relevance to the model files to be delivered under this project.

**Task Outcomes and Deliverables:**

* Digital Groundwater model report with figures and appendices presenting how model has been updated and refined, the quality of the calibration and relevant recommendations for further works. Hard copies of the report will not be required.
* Updated and refined pre and post processing spreadsheets, 4R and MODFLOW input and output files for standard scenarios, that all run on Environment Agency systems. The deliverables shall be comprehensive, such that the Environment Agency will be able to run, use, apply and analyse all data.
* Geographical Information Systems (GIS) data sets of updated model files

# Contract Management

This contract shall be managed on behalf of the Agency bythe project manager, Victoria Fry (see Section 2 for contact details).

We will raise purchase orders to cover the cost of the services and will issue to the awarded supplier following contract award.

Invoices shall be issued after specific project tasks and milestones have been completed.

Before the invoice is issued, a fee note must be emailed in advance to the contract manager for approval. All invoices must quote the purchase order number in order to be processed. A file copy invoice must be provided to the contract manager, on request. The timescale for payment of invoices will be up to 30 days after we have received a valid invoice.

# Sustainability Considerations

**Sustainability Considerations**

We are committed to continually improving our sustainability performance. The Environment Agency has set itself tough objectives as a clear commitment and contribution to sustainable development throughout England. The Agency recognises that this can only be achieved through commitment from all sectors of society and it is intent on raising awareness amongst industry and commerce.

Contractors must adopt a sound proactive environmental approach, designed to minimise harm to the environment.

Environmental criteria should be considered as part of your tender submission with credit given for innovation. Factors to be considered could include areas such as:

* + - Paper use: All documents and reports prepared by consultants and contractors are produced wherever possible on recycled paper containing at least 100% post consumer waste and printed double sided.
		- Travel: use of public transport, reduce face to face meetings by using email and videoconferencing. Meetings to be held in locations to minimise travel and close to public transport links.
		- Packaging: should be kept to a minimum. Re-use and disposal issues must be considered.
		- Efficient Energy and Water Use.
		- Disposal of Waste: Whilst on site the contractor is responsible for the disposal of their own waste and can only use client facilities with express permission from the on site facilities officer.
		- Whilst on site, contractors should comply with the local environmental policy statement which will be made available to you in advance or on arrival.

**Diversity and Equal Opportunities**

We are committed to promoting equality and diversity in all we do and valuing the diversity of our workforce, customers and communities.  As a public body, we publish regular information about what our equality objectives are and how we’re meeting them.

<https://www.gov.uk/government/organisations/environment-agency/about/equality-and-diversity>

**Health and Safety**

Contractors will be responsible for making sure all required health and safety aspects including risk assessments are undertaken and required management measures are in place to protect worker exposure. This includes management of all partners, consortium members and subcontractors.

**IEM2020:** **Sustainability Objectives**

As the Environment Agency, our overarching aim is to protect and improve the environment for people and wildlife. Over the last 10 years we have achieved significant reductions in our environmental impacts that occur through our everyday operations. This included a 40% reduction in our carbon emissions and a 37% reduction in the number of miles we travel. This year we have launched our new Internal Environmental Management strategy to take us through to 2020, building on these successes and widening our ambition.

**Supply chain**

Our 2020 approach will have a very strong emphasis on the indirect impacts of our supply chain.

Our supply chain accounts for over 70% of our total environmental impacts.

Working with our supply chain we want to be world class in the area of environmental management. The environmental impacts of our work and that delivered by and through our supply chain must be reduced; environmental risks must be effectively managed and opportunities for enhancements investigated.

As an organisation, our environmental management system (EMS) is accredited to ISO14001 and EMAS standards. Our procurement activities form part of this system; driving environmental performance improvements across the value chain.

# Additional Information

### Copyright and confidentiality

Unless otherwise indicated, the copyright in all of the documentation belongs to the Environment Agency, and the documentation is to be returned to us with your tender. The contents of the documentation must be held in confidence by you and not disclosed to any third party other than is strictly necessary for the purposes of submitting your quote. You must also ensure that a similar obligation of confidentiality is placed upon any third party to whom you may need to disclose any of the documentation for the purposes of the tender.

### Accuracy of documentation

You should check all documentation; should any part be found to be missing or unclear you should immediately contact us at the address given in the covering letter. No liability will be accepted by the Environment Agency for any omission or errors in the documentation which could have been identified by you.

### Amendments to documentation

Prior to the date for return of tenders, we may clarify, amend or add to the documentation. A copy of each instruction will be issued to every Tenderer and shall form part of the documentation. No amendment shall be made to the documentation unless it is the subject of an instruction. The Tenderer shall promptly acknowledge receipt of such instructions.

### Alternative Offers

Alternative offers may be considered if they constitute a fully priced alternative and are submitted in addition to a quotation complying with the requirements of the Invitation to Quote Documents. If, for any reason you wish to submit an alternative offer without a fully compliant tender please contact us in accordance with the details in the covering letter.

## Continuity of personnel

The Contractor shall employ sufficient staff to ensure that the Services are provided at all times and in all respects to the Project Standard. It shall be the duty of the Contractor to ensure that a sufficient reserve of staff is available to ensure project delivery in the event of staff holidays, sickness or voluntary absence

The Environment Agency will be notified immediately of any changes to personnel associated with the project. The Contractor will ensure that every effort is made to replace outgoing staff with personnel of equal calibre and expertise. All new members of staff undertaking work for the Project will need to be agreed by the Environment Agency prior to commencement.

At all times, the Contractor shall only employ in the execution and superintendence of the Contract persons who are suitable and appropriately skilled and experienced.

## Intellectual property rights

All results, including material and tools produced, developed or paid for under this contract shall be the property of the Environment Agency.

## References

The Environment Agency may request recent and relevant references prior to the award of the project.

**Contract award**

This Request for Quote is issued in good faith but we reserve the right not to award any or all of this work.

# Data Protection Act Addendum to Specification

## Protection of personal data

In order to comply with the Data Protection Act 1998 the Contractor must agree to the following:

* You must only process the personal data in strict accordance with instructions from the Environment Agency.
* You must ensure that all the personal data that we disclose to you or you collect on our behalf under this agreement are kept confidential.
* You must take reasonable steps to ensure the reliability of employees who have access to personal data.
* Only employees who may be required to assist in meeting the obligations under this agreement may have access to the personal data.
* Any disclosure of personal data must be made in confidence and extend only so far as that which is specifically necessary for the purposes of this agreement.
* You must ensure that there are appropriate security measures in place to safeguard against any unauthorised access or unlawful processing or accidental loss, destruction or damage or disclosure of the personal data.
* On termination of this agreement, for whatever reason, the personal data must be returned to us promptly and safely, together with all copies in your possession or control.

# Conditions of Contract

**Conditions of Contract - Services**

**Ref:** ENV0001002

**Title:** Cotswolds Groundwater Model Update and Refinement

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1. **DEFINITIONS**
	1. In the Contract, unless the context otherwise requires the following words and expressions shall have the following meanings assigned to them.
		1. Agency

The Environment Agency, its successors and assigns.

* + 1. Agency Property

All property issued or made available for use by the Agency to the Contractor in connection with the Contract.

* + 1. The Appendix

The Appendix to these Conditions.

* + 1. The Contract

These Conditions including the Appendix, any Special Conditions, Specification, Pricing Schedule, Contractor’s tender, acceptance letter and any relevant documents agreeing modifications exchanged before the Contract is awarded, and any subsequent amendments or variations agreed in writing.

* + 1. The Contractor

The person, firm company or body who undertakes to supply the Services to the Agency as defined in the Contract.

* + 1. Contract Period

The time period stated in the Appendix or otherwise provided in the Contract, for the performance of the Services.

* + 1. Contractor Personnel

means all directors, officers, employees, agents, consultants and contractors of the Contractor and/or of any sub-contractor engaged in the performance of its obligations under this Contract

* + 1. Contract Price

The price exclusive of VAT set out in the Contract for which the Contractor has agreed to supply the services.

* + 1. Contract Supervisor

Any duly authorised representative of the Agency notified in writing to the Contractor for all purposes connected with the Contract. Any Notice or other written instruction given by or made to the Contract Supervisor, shall be taken as given by or made to the Agency.

* + 1. Contracting Authority

means any contracting authorities (other than the Environment Agency) as defined in regulation 2 of the Public Contract Regulations 2015 (SI 2015/102) (as amended).

* + 1. Data Protection Legislation

means: (i) the General Data Protection Regulation (Regulation (EU) 2016/679) or GDPR, the Law Enforcement Directive (Directive (EU) 2016/680) ("LED") and any applicable national implementing Laws as amended from time to time (ii) the Data Protection Act 1998 ("DPA 1998") and/or the Data Protection Act 2018 ("DPA 2018") to the extent that it relates to processing of personal data and privacy; (iii) all applicable Law about the processing of personal data and privacy

* + 1. Data Protection Schedule

The Schedule attached to this Contract describing how the Parties will comply with the Data Protection Legislation.

* + 1. Intellectual Property Rights

All Intellectual Property Rights including without limitation, patents, patent applications, design rights, registered designs, utility models, trade and service marks and applications for same, copyright know-how, rights in semi-conductor chip topography, and in each case whether protectable at law or not, and if protectable, whether an application has been made for such protection or not, and all similar industrial, commercial, monopoly or other intellectual property rights whether present or future, vested or contingent wherever protected.

* + 1. Law

means any law, subordinate legislation within the meaning of Section 21(1) of the Interpretation Act 1978, bye-law, enforceable right within the meaning of Section 2 of the European Communities Act 1972, regulation, order, regulatory policy, mandatory guidance or code of practice, judgment of a relevant court of law, or directives or requirements with which the Contractor is bound to comply

* + 1. Notice

Any written instruction or notice given to the Contractor by the Contract Supervisor, delivered by:

1. fax, or hand delivery to the Contractor’s registered office or other address notified for the purposes of the Contract and deemed to have been served at the date and time of delivery;

First class post to the Contractor’s registered office. Such Notices are deemed to have been served 48 hours after posting.

* + 1. Results

All things produced in performing the Services including maps, plans, photographs, drawings, tapes, statistical data, experimental results, field data, analysis of results, published and unpublished results and reports, inventions, computer programmes and user documentation.

* + 1. The Resulting Rights

All Intellectual Property Rights in the Results that are originated, conceived, written or made by the Contractor, whether alone or with others in the performance of the Services or otherwise resulting from the Contract.

* + 1. Permission

Express permission given in writing before the act being permitted.

* + 1. Services

All Services detailed in the Specification including any additions or substitutions as may be requested by the Contract Supervisor.

* + 1. Regulations

Means the Public Contract Regulations 2015 (SI 2015/102) as amended.

* 1. Except as set out above and in the Data Protection Schedule, the Contract shall be interpreted in accordance with the Interpretation Act 1988.
	2. All headings in these Conditions are for ease of reference only, and shall not affect the construction of the Contract.
	3. Any reference in these Conditions to a statutory provision will include all subsequent modifications.
	4. All undefined words and expressions are to be given their normal English meaning within the context of this Contract. Any dispute as to the interpretation of such undefined words and expressions shall be settled by reference to the definition in the Shorter Oxford English Dictionary.
1. **PRECEDENCE**

To the extent that the following documents form the Contract, in the case of conflict of content, they shall have the following order of precedence:

* Conditions of Contract including Appendix, Data Protection Schedule and any Special Conditions;
* Specification;
* Pricing Schedule;
* Drawings, maps or other diagrams.
1. **CONTRACT SUPERVISOR**

The Contractor shall strictly comply with any instruction given by the Contract Supervisor concerning or about the Contract provided such instructions are reasonable and consistent with the nature, scope and value of the Contract. All such instructions shall be in writing. The Contractor is not obliged to comply with any verbal instruction from the Contract Supervisor that is not confirmed in writing within 7 working days.

1. **THE SERVICES**
	1. The Contractor shall provide all staff, equipment, materials and any other requirements necessary for the performance of the Contract using reasonable skill, care and diligence, and to the reasonable satisfaction of the Contract Supervisor.
	2. The Contractor shall only employ in the execution and superintendence of the Contract persons who are suitable and appropriately skilled and experienced. The Contract Supervisor shall be at liberty to object to and require the Contractor to remove any person employed in or about the Contract who is unsuitable, misconducts himself, is incompetent or negligent in the performance of his duties or persists in conduct which could endanger the health or safety of others. Such persons shall not be employed again on the Contract without the Permission of the Contract Supervisor.
2. **ASSIGNMENT**
	1. The Contractor shall not assign, transfer or sub-contract the Contract, or any part of it, without the Permission of the Contract Supervisor.
	2. Any assignment, transfer or sub-contract entered into, shall not relieve the Contractor of any of his obligations or duties under the Contract.
	3. Nothing in this Contract confers or purports to confer on any third party any benefit or any right to enforce any term of the Contract
3. **CONTRACT PERIOD**

The Contractor shall perform the Services within the time stated in the Appendix, subject to any changes arising from Condition 10 (Variations,) and/or Condition 11 (Extensions of time.)

1. **PROPERTY**
	1. All property issued by the Agency to the Contractor in connection with the Contract shall remain the property of the Agency, and shall be used in the execution of the Contract, and for no other purpose whatsoever without the prior approval of the Contract Supervisor.
	2. The Contractor shall keep all Agency Property in safe custody and good condition, set aside and clearly marked as the property of the Agency.
	3. On expiry or earlier termination of the Contract the Contractor shall, if so required, either surrender such property to the Agency or otherwise dispose of it as instructed by the Contract Supervisor.
2. **MATERIALS**
	1. The Contractor shall be responsible for establishing his own sources of supply for goods and materials and will be responsible for ensuring the reasonable and proper conduct by his suppliers and staff whilst on the Agency’s premises.
	2. The Contractor shall not place, or cause to be placed, any orders with suppliers or otherwise incur liabilities in the name of the Agency or any representative of the Agency.
3. **SECURITY**
	1. The Contractor shall be responsible for the security of all goods and equipment belonging to the Agency and used by the Contractor in the provision of the Services, belonging to the Contractor, or Contractors staff, or sub-contractors whilst on Agency premises.
	2. This Condition shall not prejudice the Agency’s rights under Condition 15.
4. **VARIATIONS**
	1. The Contract Supervisor may vary the Contract by adding to, deleting or otherwise modifying the Services to be supplied, by written order to the Contractor provided such variations are reasonable and consistent with the nature, scope and value of the Contract.
	2. The value of any such variation, other than any variation arising out of Condition 10.3, shall be determined by reference to the rates contained in the Pricing Schedule. Where the Services so ordered are not covered in the Pricing Schedule, they shall be valued at a fair and reasonable rate agreed between the Contract Supervisor and the Contractor.

* 1. Where a variation is the result of some default or breach of the Contract by the Contractor or some other cause for which he is solely responsible, any additional cost attributable to the variation shall be borne by the Contractor.
	2. The Contractor may also propose a variation to the Services but no such variation shall take effect unless agreed and confirmed in writing by the Contract Supervisor.
	3. No variation shall have the effect of invalidating the Contract, or placing the Contract at large, if that variation is reasonably consistent with the nature, scope and value of the Contract. The Agency may vary the Contract to comply with a change in English Law. Such a change will be effected by the Contract Supervisor notifying the Contractor in writing.
	4. The Agency may assign, novate or otherwise dispose of its rights and obligations under the Contract or any part thereof to:
		1. any Contracting Authority; or
		2. any other body established by the Crown or under statute in order substantially to perform any of the functions that had previously been performed by the Agency; or
		3. any private sector body which substantially performs the functions of the Agency, provided that any such assignment, novation or other disposal shall not increase the burden of the Contractor's obligations under the Contract.
	5. Any change in the legal status of the Agency such that it ceases to be a Contracting Authority shall not affect the validity of the Contract. In such circumstances the Contract shall bind and inure to the benefit of any successor body to the Agency.
1. **EXTENSIONS OF TIME**
	1. Should the performance of the Contract be directly delayed by any cause beyond the reasonable control of the Contractor, and provided that the Contractor shall first have given the Contract Supervisor written notice within five working days after becoming aware that such delay was likely to occur, then the Contract Supervisor, if satisfied that this Condition applies:
		1. in the case of any delay of which the Agency is not the cause, may grant the Contractor such extension of time, as in his opinion is reasonable, having regard without limitation, to any other delays or extensions of time that may have occurred or been granted under the Contract. The Contract Price shall not increase as a result of such an extension of time.
		2. in the case of any delay of which the Agency is the cause, shall grant the Contractor a reasonable extension of time to take account of the delay.
	2. No extension of time shall be granted where in the opinion of the Agency the Contractor has failed to use reasonable endeavours to avoid or reduce the cause and/or effects of the delay.
	3. Any extension of time granted under this Condition shall not affect the Agency’s rights to terminate or determine the Contract under Conditions 13 and 14.
2. **DEFAULT**
	1. The Contractor shall be in default if he:
		1. fails to perform the Contract with due skill, care, diligence and timeliness;
		2. refuses or neglects to comply with any reasonable written instruction given by the Contract Supervisor;
		3. is in breach of the Contract.
	2. Where in the opinion of the Contract Supervisor, the Contractor is in default, the Contract Supervisor may serve a Notice giving at least five working days in which to remedy the default.
	3. If the Contractor fails to comply with such a Notice the Contract Supervisor may, without prejudice to any other rights or remedies under the Contract, take over for as such a period as is necessary the performance of the relevant part of the Contract and make other arrangements for its completion. Any extra costs arising from this action, will be paid by the Contractor or deducted from any monies owing to him.
3. **TERMINATION**
	1. The Agency may immediately, without prejudice to any other rights and remedies under the Contract, terminate all or any part of the Contract by Notice in writing to the Contractor, Receiver, Liquidator or to any other person in whom the Contract may become vested, if the Contractor:
		1. fails in the opinion of the Contract Supervisor to comply with (or take reasonable steps to comply with) a Notice under Condition 12.2.
		2. becomes bankrupt or insolvent, or has a receiving order made against him, or makes and arrangement with his creditors or (being a corporation) commences to be wound up, not being a voluntary winding up for the purpose of reconstruction or amalgamation, or has a receiver, administrator, or administrative receiver appointed by a Court.

'Termination under the Regulations'

* 1. The Agency may terminate the Contract on written Notice to the Contractor if:
		1. the contract has been subject to a substantial modification which requires a new procurement procedure pursuant to regulation 72(9) of the Regulations;
		2. the Contractor was, at the time the Contract was awarded, in one of the situations specified in regulation 57(1) of the Regulations, including as a result of the application of regulation 57(2), and should therefore have been excluded from the procurement procedure which resulted in its award of the Contract; or
		3. The Contract should not have been awarded to the Contractor in view of a serious infringement of the obligations under the Treaties and the Regulations that has been declared by the Court of Justice of the European Union in a procedure under Article 258 of the TFEU.
1. **DETERMINATION**
	1. Without prejudice to any other rights or remedies under the Contract, the Agency reserves the right to determine the Contract at any time by giving not less than one month’s Notice, (or such other time period as may be appropriate).
	2. The Agency shall pay the Contractor such amounts as may be necessary to cover his reasonable costs and outstanding and unavoidable commitments necessarily and solely incurred in properly performing the Contract prior to determination.
	3. The Agency will not pay for any costs or commitments that the Contractor is able to mitigate and shall only pay those costs that the Agency has validated to its satisfaction. The Agency's total liability under this Condition shall not in any circumstances exceed the Contract Price that would have been payable for the Services if the Contract had not been determined.
2. **INDEMNITY**
	1. Without prejudice to the Agency’s remedies for breach of Contract, the Contractor shall fully indemnify the Agency and its staff against any legally enforceable and reasonably mitigated liability, loss, costs, expenses, claims or proceedings in respect of:
		1. death or injury to any person;
		2. loss or damage to any property excluding indirect and consequential loss;
		3. infringement of third party Intellectual Property Rights which might arise as a direct consequence of the actions or negligence of the Contractor, his staff or agents in the execution of the Contract.
	2. This Condition shall not apply where the damage, injury or death is a direct result of the actions, or negligence of the Agency or its staff.
3. **LIMIT OF CONTRACTOR’S LIABILITY**
	1. The limit of the Contractor’s liability for each and every claim by the Agency, other than for death or personal injury, whether by way of indemnity or by reason of breach of contract, or statutory duty, or by reason of any tort shall be:
		1. the sum stated in the Appendix [DRAFTING NOTE – INSERT SUM and consider personal data risk];
		2. if no sum is stated, the Contract Price or five million pounds whichever is the greater.
4. **INSURANCE**
	1. The Contractor shall insure and maintain insurance against liabilities under Condition 15 (Indemnity) in the manner and to the values listed in the Appendix to these Conditions [DRAFTING NOTE – CHECK SUM and consider personal data risk]. If no sum is stated, the value insured shall be £5M (five million pounds.)
	2. If specifically required by the Agency, nominated insurances shall be in the joint names of the Contractor and the Agency.
	3. The Contractor shall, upon request, produce to the Contract Supervisor documentary evidence that the insurances required are fully paid up and valid for the duration of the Contract.
5. **PREVENTION OF FRAUD AND CORRUPTION**
	1. The Contractor shall not offer, give, or agree to give anything, to any person an inducement or reward for doing, refraining from doing, or for having done or refrained from doing, any act in relation to the obtaining or execution of the Contract or for showing or refraining from showing favour or disfavour to any person in relation to the Contract.
	2. The Contractor shall take all reasonable steps, in accordance with good industry practice, to prevent fraud by the Contractor’s staff and the Contractor (including its shareholders, members and directors) in connection with the Contract and shall notify the Agency immediately if it has reason to suspect that any fraud has occurred or is occurring or is likely to occur.
	3. If the Contractor or the Contractor’s staff engages in conduct prohibited by this clause 18 or commits fraud in relation to the Contract or any other contract with the Crown (including the Agency) the Agency may:
		1. terminate the Contract and recover from the Contractor the amount of any loss suffered by the Agency resulting from the termination, including the cost reasonably incurred by the Agency of making other arrangements for the supply of the Goods and any additional expenditure incurred by the Agency throughout the remainder of the Contract; or
		2. recover in full from the Contractor any other loss sustained by the Agency in consequence of any breach of this clause.
	4. The Contractor shall not, directly or indirectly through intermediaries commit any offence under the Bribery Act 2010 (as amended), in any of its dealings with the Agency.
6. **MONITORING AND AUDIT**
	1. The Contract Supervisor may inspect and examine the Services being carried out on the Agency’s premises, or elsewhere at any reasonable time. Where the Services are being performed on other than the Agency’s premises, reasonable notice to inspect shall be given to the Contractor. The Contractor shall give all such facilities as the Contract Supervisor may reasonably require for such inspection and examination.
7. **CONTRACT PRICE**
	1. The Contract Price will be paid by the Agency to the Contractor as amended by any Variations ordered under Condition 10 (Variations).
	2. In addition to the Contract Price, the Agency will pay to the Contractor such Value Added Tax (if any) as may properly be chargeable at rates ruling at the time of invoice.
8. **INVOICING AND PAYMENT**
	1. Invoices shall only be submitted for work already satisfactorily completed, and accompanied by such information as the Contract Supervisor may reasonably require to verify the Contractor’s entitlement to payment. Such invoices will be paid in 30 days from receipt by the Agency.
	2. If any sum is payable under the Contract by the Contractor to the Agency, whether by deduction from the Contract or otherwise, it will be deducted from the next available invoice.
	3. If the Contractor enters into a sub-contract with a supplier for the purpose of performing its obligations under the Contract, it shall ensure that a provision is included in the sub-contract which requires payment to be made of all sums due from it to the sub-contractor within 30 days from the receipt of a valid invoice.
9. **INTELLECTUAL PROPERTY RIGHTS**
	1. All Prior Rights used in connection with the Services shall remain the property of the party introducing them. Details of each party’s Prior Rights are set out in the Prior Right Schedule to this contract.
	2. All Results shall be the property of the Agency.
	3. The Resulting Rights in any Results, and any interim results shall, from the time they arise, be the property of the Agency and the Agency shall be free, should it so wish, to apply at its own expense for patent or other protection in respect of the Results or any interim results. The Agency’s intention to apply for such patent or other protection shall be notified to the Contractor. Such applications for patents or other registered intellectual property rights shall be filed in the name of the Agency.

Unless otherwise agreed in writing between the Contractor and the Agency, the Contractor hereby:

* + 1. assigns to the Agency all Resulting Rights
		2. grants the Agency a non-exclusive, non-transferable (save for the purposes of sub-licensing, reorganisation or transfer to a successor body, for the purposes of all the successor body's normal business use), irrevocable , royalty free perpetual licence to the Agency in respect of all the Contractor's Prior Rights necessary in order for the Agency to use or exploit the Resulting Rights.
	1. The Contractor undertakes to the Agency not to use, exploit or deal with any of the Agency's Prior Rights, other than in the performance of the Contract unless the Contractor has first obtained a written licence from the Agency, in specific terms to do so.
	2. The Agency undertakes to the Contractor not to use or exploit the Contractor's Prior Rights, save as provided in Condition 22.3.2.
	3. The Contractor warrants to the Agency that the performance of the Services, the Contractor’s Prior Rights and the Results shall not in any way infringe any intellectual property rights of any third party.
	4. If the Contractor is prevented from carrying out his obligations under the Contract due to any infringement or alleged infringement of any Intellectual Property Rights, the Agency may without prejudice to any other rights and remedies under the Contract, exercise the powers and remedies available to it under Conditions 13 and 14, Termination and Determination respectively.
	5. The Contractor shall not be liable if such infringement arises from the use of any design, technique or method of working provided by or specified by the Agency.
	6. The Contractor waives in favour of the Agency its rights to object to derogatory treatment of the Results of the Work and the Contractor also agrees that he will not assert or seek to enforce against the Agency and/or any other person, firm or company any of its moral rights as defined in the Copyright Designs and Patents Act 1988 (as amended) without the prior agreement of the Agency.
	7. The Contractor shall not be liable for any consequential losses, damage or injuries arising from third party misuse of the Results, of which the Contractor is not aware.
1. **WARRANTY**

The Contractor warrants that the Services supplied by him will be discharged with reasonable skill, care and diligence.

1. **STATUTORY REQUIREMENTS**

The Contractor shall fully comply with all relevant statutory requirements in the performance of the Contract, including, but not limited to the giving of all necessary notices and the paying of all fees.

1. **ENVIRONMENT, SUSTAINABILITY AND DIVERSITY**
	1. The Contractor in the performance of this Contract should adopt a sound proactive environmental approach, designed to minimise harm to the environment, to conserve energy, water, wood, paper and other resources, reduce waste and phase out the use of single-use plastic, ozone depleting substances and minimise the release of greenhouse gases, volatile organic compounds and other substances damaging to health and/or the environment, and be able to provide proof of so doing to the Agency on demand.
	2. The Agency is committed to ensuring that workers employed within its supply chains are treated fairly, humanely and equitably. The Agency expects the Contractor to share this commitment and to understand any areas of risk associated with this and work to ensure they are meeting International Labour Standards. The Contractor ensures that it and its sub-contractors and its supply chain:
		1. comply with the provisions of the Modern Slavery Act 2015;
		2. pay staff fair wages (and pays its staff in the UK not less than the Foundation Living Wage Rate ); and
		3. Implement fair shift arrangements, providing sufficient gaps between shifts, adequate rest breaks and reasonable shift length, and other best practices for staff welfare and performance.
	3. The Contractor should support the Agency to achieve its Public Sector Equality Duty by complying with the Agency's policies (as amended from time to time) on Equality, Diversity and Inclusion (EDI). This includes ensuring that the Contractor (and their sub-contractors) in the delivery of its obligations under this Contract:
		1. eliminates discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010;
		2. advances equality of opportunity between people who share a protected characteristic and those who do not; and
		3. fosters good relations between people who share a protected characteristic and those who do not.
2. **PUBLICITY**

The Contractor shall not advertise or publicly announce that he is supplying Services or undertaking work for the Agency without the Permission of the Contract Supervisor.

1. **LAW**

This Contract shall be governed and construed in accordance with the Law, and subject to the jurisdiction of the courts of England.

1. **WAIVER**
	1. No delay, neglect or forbearance by the Agency in enforcing any provision of the Contract shall be deemed to be a waiver, or in any other way prejudice the rights of the Agency under the Contract.
	2. No waiver by the Agency shall be effective unless made in writing.
	3. No waiver by the Agency of a breach of the Contract shall constitute a waiver of any subsequent breach.
2. **ENFORCEABILITY AND SURVIVORSHIP**
	1. If any part of the Contract is found by a court of competent jurisdiction or other competent authority to be invalid or legally unenforceable, that part will be severed from the remainder of the Contract which will continue to be valid and enforceable to the fullest extent permitted by law.
	2. The following clauses shall survive termination of the Contract, howsoever caused: 13, 14, 15, 22, 23, 24, 27, 29, 30, 31, 32 and 33.
3. **DISPUTE RESOLUTION**
	1. All disputes under or in connection with this agreement shall be referred first to negotiators nominated at a suitable and appropriate working level by the Agency and the Contractor.
	2. If the parties' negotiators are unable to resolve the dispute within a period of forty five days from its being referred to them, the dispute shall be referred at the instance of either party to the parties' respective senior managers or directors (supported as necessary by their advisers).
	3. If the parties' respective senior managers or directors are unable to resolve the dispute within forty five days the dispute shall be referred to the Centre for Dispute Resolution who shall appoint a mediator and the parties shall then submit to the mediator's supervision of the resolution of the dispute.
	4. Recourse to this dispute resolution procedure shall be binding on the parties as to submission to the mediation but not as to its outcome. Accordingly all negotiations connected with the dispute shall be conducted in strict confidence and without prejudice to the rights of the parties in any future legal proceedings. Except for any party's right to seek interlocutory relief in the courts, no party may commence other legal proceedings under the jurisdiction of the courts or any other form of arbitration until forty five days after the appointment of the mediator.
	5. If, with the assistance of the mediator, the parties reach a settlement, such settlement shall be put in writing and, once signed by a duly authorised representative of each of the parties, shall remain binding on the parties.
	6. The parties shall bear their own legal costs of this dispute resolution procedure, but the costs and expenses of mediation shall be borne by the parties equally.
	7. Any of the time limits in Conditions 30 may be extended by mutual agreement. Such agreed extension shall not prejudice the right of either party to proceed to the next stage of resolution.
4. **GENERAL**
	1. Neither party to the Contract will be liable to the other for any delay in performing or failing to perform its obligations (other than a payment obligation) under the Contract because of any cause outside its reasonable control. Such delay or failure will not constitute a breach of the Contract and the time for performance of the affected obligation will be extended by a reasonable period.
	2. The Contract contains the whole agreement between the parties and supersedes all previous communications, representations and arrangements, written or oral. It is accepted that the Contract has not been entered into on the basis of any representations that are not expressly contained in the Contract.
5. **FREEDOM OF INFORMATION ACT**
	1. The Agency is committed to open government and to meeting its responsibilities under the Freedom of Information Act 2000 (as amended) ('Act') and the Environmental Information Regulations 2004 (as amended) (Regulations').
	2. The Contractor agrees that:
		1. All information submitted to the Agency may need to be disclosed by the Agency in response to a request under the Act or the Regulations; and
		2. The Agency may include information submitted (in whole or in part) in the publication scheme which it maintains under the Act or publish the Contract, including from time to time agreed changes to the Contract, to the public.
	3. If the Contractor considers that any of the information included in its tender, or that it has submitted to the Agency or that is otherwise contained in the Contract, is commercially sensitive, it shall identify and explain (in broad terms) what harm may result from disclosure if a request is received, and the time period applicable to that sensitivity. The Contractor acknowledges that if it has indicated that information is commercially sensitive, such information may still be required to be disclosed by the Agency under the Act or the Regulations. The receipt of any material marked 'confidential' or equivalent by the Agency shall not be deemed to infer that the Agency agrees any duty of confidentiality by virtue of that marking.

1. **DATA PROTECTION**
	1. In the event that the Contract requires data to be processed within the meaning of the Data Protection Legislation the Data Protection Schedule shall be completed by the Parties and provisions and definitions therein shall apply and bind the Parties as part of this Contract.

**Appendix to Conditions (Services)**

Ref: ENV0001002

Title: Cotswolds Groundwater Model Update and Refinement

 **Condition**

**1 Contract Supervisor 3**

 Victoria Fry

Address:-

Environment Agency

Red Kite House

Howbery Park

Crowmarsh Gifford

 Wallingford

 Oxon

 OX10 8BD

1. **Contractor**

«Company\_Name»

Address:

 «SUPPLIER\_ADDRESS»

 «TOWN\_CITY»

 «COUNTY»

 «ZIP»

**3 Completion**  **6**

Contract Start Date 14th October 2019

Contract End Date 31st March 2019

**4 Delivery** **11**

Address:-

As listed under address for section 1 Contract Supervisor

**5 Insurance 17**

Professional Indemnity Min. Cover £2 million

Third Party Minimum Cover £5 million

Public Liability Min. Cover £5 million

**6 Limit on Liability** **16**

Limit on Contractors Liability £5million

# APPENDIX A - PRICING SCHEDULE

ALL COSTS QUOTED MUST BE EXCLUSIVE OF VAT

All costs must be quoted either on this schedule or in a Microsoft Excel pricing schedule template (ENV0001002 Cotswolds Pricing Schedule.xlsx) provided by the Agency. Any costs not detailed will not be paid.

**Staff Costs**

Please detail the hourly and day rates of your proposed personnel in the table below.

Please also advise how many hours you constitute a working day.

|  |
| --- |
| **Staff Rates** |
| **Number of hours constitute at working day:** |  |
| **Named Personnel** | **Grade / Title** | **Organisation** | **Hourly Rate****(£)** | **Day Rate****(£)** |
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**Task Breakdown**

Please detail your task costs in the tables below.

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| **Task Breakdown Part 1 – Staff**  |
| **Task** | **Named Personnel** | **Hourly Rate** **(£)** | **No. of Hours** | **TOTAL £** |
| **TASK 1 Update Recharge and Groundwater Model**  |   |   |   | 0.00 |
|   |   |   | 0.00 |
|  |  |  | 0.00 |
|   |   |   | 0.00 |
|   |   |   | 0.00 |
| **SUB-TOTAL FOR TASK 1** | **0** | **0.00** |
| **TASK 2 Review of Public Water Supply Abstractions and Effluent Discharge relationships**  |   |   |   | 0.00 |
|   |   |   | 0.00 |
|  |  |  | 0.00 |
|   |   |   | 0.00 |
|   |   |   | 0.00 |
| **SUB-TOTAL FOR TASK 2** | **0** | **0.00** |
| **TASK 3 Develop a Future Predicted Run**  |   |   |   | 0.00 |
|   |   |   | 0.00 |
|  |  |  | 0.00 |
|   |   |   | 0.00 |
|   |   |   | 0.00 |
| **SUB-TOTAL FOR TASK 3** | **0** | **0.00** |
| **TASK 4 Model Review and Refinement**    |   |   |   | 0.00 |
|  |  |  | 0.00 |
|   |   |   | 0.00 |
|   |   |   | 0.00 |
|   |   |   | 0.00 |
| **SUB-TOTAL FOR TASK 4** | **0** | **0.00** |
| **TASK 5 Improving Model Run Times** |   |   |   | 0.00 |
|   |   |   | 0.00 |
|   |   |   | 0.00 |
|  |  |  | 0.00 |
|   |   |   | 0.00 |
| **SUB-TOTAL FOR TASK 5** | **0** | **0.00** |
| **TASK 6 Reporting and Model Delivery** |   |   |   | 0.00 |
|   |   |   | 0.00 |
|  |  |  | 0.00 |
|   |   |   | 0.00 |
|   |   |   | 0.00 |
| **SUB-TOTAL FOR TASK 6** | **0** | **0.00** |
| **STAFF SUB-TOTAL** | **0** | **0.00** |

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| **Task Breakdown Part 2 – EXPENSES AND OTHER COSTS**The following limits will be applicable to all claims for travel and subsistence under this contract:a. Travel by rail: standard class should be used at all timesb. Travel by car: 45 pence/mileHotel bookings should be made through the Environment Agency’s corporate travel contract. Details of this contract are available from the Corporate Contracting Team. When making reservations you should state that you are a contractor working on Environment Agency business. Hotel charges must not exceed a maximum limit per night bed and breakfast (VAT included) of: £140 in London; £100 in Bristol; £90 in Warrington; £85 in Reading; £75 in Aberdeen, Birmingham, Belfast, Cardiff, Coventry, Edinburgh, Glasgow, Harlow, Leeds, Manchester, Middlesbrough, Newcastle, Oxford, Portsmouth, Sheffield and York; and £70 in all other destinations. Please note that these hotel ceiling rates are subject to change throughout the life of the contract. Expenditure on dinner during an overnight stay must not exceed a maximum limit of £25, including a drink. Receipts for all rail travel, hotel and food expenses will be required as proof of expenditure and will be reimbursed at cost. No profit or additional cost shall be applied by the contractor to such personal expenses. |
| **Task Number** | **Type of expense or other cost** | **Details of cost** | **Cost****(£)** |
|  |  |  | 0.00 |
|  |  |  | 0.00 |
|  |  |  | 0.00 |
|  |  |  | 0.00 |
|  |  |  | 0.00 |
|  |  |  | 0.00 |
|  |  |  | 0.00 |
|  |  |  | 0.00 |
| **EXPENSES AND OTHER COSTS SUB-TOTAL** | **0.00** |

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| **Task Breakdown Part 3 - DISCOUNTS, REBATES AND REDUCTIONS**Please detail below any discounts, rebates and other reductions you are prepared to offer and the basis of those incentives |
| **Details** | **Cost****(£)** |
|  | 0.00 |
|  | 0.00 |
|  | 0.00 |
|  | 0.00 |
| **DISCOUNTS, REBATES AND REDUCTIONS SUB-TOTAL** | **0.00** |

**Total Overall Cost**

Please detail the total fixed cost for the project from the tables above.

|  |  |
| --- | --- |
| **Item** | **Total Amount****(£)** |
| **STAFF COSTS** | 0.00 |
| **EXPENSES AND OTHER COSTS** | 0.00 |
| **DISCOUNTS, REBATES AND REDUCTIONS** | 0.00 |
| **TOTAL OVERAL COST** | **0.00** |

# APPENDIX B - PRIOR RIGHTS SCHEDULE

Details of Prior Rights held by the Parties (To be updated as Rights are introduced during the period of the Contract)

Prior Rights owned or lawfully used by a Party, whether under licence or otherwise, which it introduces to the Project for the purposes of fulfilling its obligations under the Contract

Held by the Environment Agency:

|  |  |  |
| --- | --- | --- |
| **Name and description of Prior Rights** | **Extent of proposed use in the Project**  | **Proprietary owner of the Prior Rights** |
| Cotswolds Numerical Groundwater Model | This tender regards updating this prior right. | Environment Agency  |
|  |  |  |
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Held by the Contractor

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| **Name and description of Prior Rights** | **Extent of proposed use in the Project**  | **Proprietary owner of the Prior Rights** |
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**Explanation of Contractor's Prior Rights**
All Intellectual Property Rights owned by or lawfully used by the Contractor, whether under licence or otherwise before the date of this Contract. It can also mean any invention and know how or other intellectual property (whether or not patentable) owned by one of the parties prior to the commencement of the Project, or devised or discovered by one of them only in the course of other projects during the Project period and not arising directly from the Project.

# APPENDIX C - ACCEPTANCE OF TERMS AND CONDITIONS

I/We accept in full the terms and conditions named in Section 2 and appended to this Request for Quote document.

Company \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Print Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Position \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# APPENDIX D - CONSULTANTS DELIVERABLES FOR MODELLING STUDIES: CHECKLIST GUIDE

1. **Introduction**

This is a guideline only, actual deliverables are at the discretion of the EA. There should be a maximum delivery for a fundamental model build from scratch, with decreased deliverables for a recalibration or time series update.

Not all deliverables can be listed here. However, the EA should receive all data required to recreate the model build process, or to progress the model by updating/ recalibrating where necessary, without recourse to the originator, and in a convenient set of folders (I.e. ready for ‘relative path’ model runs) with no superfluous files included.

A default position for all deliverables from a model study is that all data must be retained indefinitely. Although this does not sit well with EA policy. Indefinite retention is required because groundwater models are expensive, long term (~30 year) assets with significant staff experience invested in them. Therefore, all data and analysis to support the thinking at the time (including previous models) has to be retained by the Environment Agency so that future work builds upon existing studies rather than repeating or losing existing work.

Data deliverables for a single regional model are likely to be of the order of 50-100 Gb for each fundamental model build and slightly less for each subsequent update. Files should be supplied to the Environment Agency on an encrypted hard drive, which can be supplied by the Environment Agency. Any files on the hard drive, should not have any individual passwords as they will not be needed due to the hard drive encryption. As EA encrypted hard drives are typical 1TB, there should be no need for delivered files to be provided as zip files.

When spreadsheets or access databases are delivered, these should be free of links to other spreadsheets and any macros built in to the spreadsheet are visible and editable. All worksheets in the spreadsheet should be visible. These should also be compatible with EA office suites (currently Office 2013).

Where coding has been carried out by the consultant, the executable and source code is expected to be delivered with the model, as detailed below.

**Guideline Check List**

1. **Model run log**
* Run logs for both recharge model and MODFLOW model, in the form of a table with one row per run. Preferred format is in excel.
1. **MODFLOW files**
* MODFLOW input files for final historical model and all scenarios run, and key calibration runs, but not for intermediate calibration runs, which are covered only in the run log. Output files for historical run only.
* MODFLOW executable and any libraries/extensions files required to run the model. (e.g. salflib.dll)
* MODFLOW source code, only if MODFLOW is a bespoke variant. Also, makefile (if used), compiler name and version, compiler options.
* Where Fortran, Python or other utilities have been used, all the executables plus their source code and version (e.g Python 2.7.5, Fortran 95/2003). All the input files used for the utilities.
1. **Recharge model files**
* Recharge model input files for the historical model and all scenarios run, and key calibration runs, but not for most intermediate calibration runs, which are covered only by the run log. Output files for historical run only.
* Recharge model executable and any libraries/extensions files required to run the model. (e.g. salflib.dll)
* Recharge model source code, every time. Also, makefile (if used), compiler name and version, compiler options.

Where Fortran, python or other utilities have been used, all the executables plus their source code and version (e.g Python 2.7.5, Fortran 95/2003). All the input files used for the utilities.

1. **Pre-processing**
* Commented spreadsheet for all historical groundwater and surface water abstraction and discharges time series (listed by location, not licence). Same for RA, FL and any other scenarios (Not NAT, which is zero abstraction)
* All other pre-processing spreadsheets, as mentioned under ‘other software outputs’ below.
* Any pre-processing utilities required to create MODFLOW or recharge input files along with source codes (as per guidance on source codes MODFLOW and recharge model).
1. **Post-processing**
* Any post-processing utilities required to extract output from MODFLOW or recharge output files along with source codes (as per guidance on source codes MODFLOW and recharge model).
* Model head output spreadsheet used for calibration
* Model head output contours used for calibration
* Model flow output spreadsheet used during calibration.
* Model accretion profile output spreadsheet used for calibration.
* Model mass balance spreadsheets used for calibration

These should also be provided for standard scenario runs (for example Naturalised, Fully Licenced and Recent Actual)

1. **Other software outputs**
* This may include SURFER or GWV files, and it should be stated which version of the software has been used. What is delivered should be compatible with EA software versions.
* Spreadsheets are instrumental in analysis during model build. All spreadsheets used for analysis should be included, unprotected, and with all macro source code visible.
1. **GIS**
* Full set of shapefiles for the recharge model input for the calibrated historical model.
* Full set of MODFLOW GIS shapefiles where these were used for pre-processing the calibrated historical model, including shapefile exports from GWV.
* Suitable .mxd files for the above
* All GIS scripts used.

Info Box 1 lists typical shapefiles that could be provided. Any ArcMap mxd projects should be accessible through the version the EA uses, ArcMap 10.4.1.

**Info Box 1 Typical shapefile or rasters to be provided with model files**

**Recharge Model**

Model area and active model area if different

Model gird

Land use distribution

Mains leakage distribution

Average rainfall and PET inputs

Average rapid runoff / runoff / runoff recharge

Average interflow release

Average riparian evapotranspiration

Average potential recharge

Average recharge

Recharge attenuation zones

**MODFLOW Model**

Model area and active model area

Model grid

Model aquifer parameters for all layers (Storage, Conductivity, VKD parameters [max, base, gradient, elevation change])

Vertical leakance between layers

Model geology

Boundary conditions

Horizontal Flow Barriers

Initial heads

Streamcell / river networks

Groundwater abstractions and discharges

Surface water abstractions and discharges

Groundwater and surface water calibration points

Rasters of model layer elevations and extent

Transmissivity distribution during dry and average conditions.

Heads for each layer during wet, dry and average conditions

Stream flow for wet, dry and average conditions

Stream leakage for wet, dry and average conditions

**Other**

There may be other datasets or model parameters that are specific to the model in question and should be delivered along with the relevant files listed above.

1. **NGMS Configuration**
* Fully operational NGMS configuration, tested for equivalence to MODFLOW outputs, and all model elements visualised in NGMS displays with time series inputs available to view.
* NGMS spreadsheets used to build config files
* NGMS spreadsheets checking NGMS outputs for acceptance testing
1. **Reporting and User Manuals**
* Draft reports should be sent in as an editable word document to allow review comments to be made easily
* Full final reports in digital format for all work done, including figures and appendices. These should not be encrypted documents, as they should not have personal information nor detailed national grid references for public water supplies contained within the report. Where appendices are spreadsheet based, the original workbooks should be supplied as well.
* If bespoke versions of either the MODFLOW or recharge models, user manual should be provided. Also, if there are any processes required external to the models, e.g rainfall interpolation or bespoke recharge processes outside the recharge model.
1. **References**
* Digital references used for the model development (pdf of papers reports etc.) should be provided, where copyright allows.
1. **Other data**
* Any other data gathered for the project (e.g. borehole logs, geophysical well logs, digitised data, 3rd party reports etc.) along with its metadata.

**Bill Morgan Jones & Vicky Fry**

**South East Groundwater Modelling Unit 16th May 2019**