



Environment
Agency

Conditions of Contract Services

Document version: October 2019

Yazor Groundwater Model Update

Contract Ref: [REDACTED]

1. DEFINITIONS

1.1. In the Contract, unless the context otherwise requires the following words and expressions shall have the following meanings assigned to them.

1.1.1. Agency

The Environment Agency, its successors and assigns.

1.1.2. Agency Property

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

1.1.3. The Appendix

The Appendix to these Conditions.

1.1.4. 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.

1.1.5. The Contractor

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

1.1.6. Contract Period

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

1.1.7. 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

1.1.8. Contract Price

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

1.1.9. 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.

1.1.10. 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).

1.1.11. 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

1.1.12.Data Protection Schedule

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

1.1.13.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.

1.1.14.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

1.1.15.Notice

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

- i. 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.

1.1.16.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.

1.1.17.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.

1.1.18.Permission

Express permission given in writing before the act being permitted.

1.1.19.Services

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

1.1.20.Regulations

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

1.2. Except as set out above and in the Data Protection Schedule, the Contract shall be interpreted in accordance with the Interpretation Act 1988.

1.3. All headings in these Conditions are for ease of reference only, and shall not affect the construction of the Contract.

1.4. Any reference in these Conditions to a statutory provision will include all subsequent modifications.

1.5. 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.

2. 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.

3. 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.

4. THE SERVICES

4.1. 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.

4.2. 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.

5. ASSIGNMENT

5.1. The Contractor shall not assign, transfer or sub-contract the Contract, or any part of it, without the Permission of the Contract Supervisor.

5.2. Any assignment, transfer or sub-contract entered into, shall not relieve the Contractor of any of his obligations or duties under the Contract.

5.3. 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.

6. 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.).

7. PROPERTY

7.1. 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.

7.2. The Contractor shall keep all Agency Property in safe custody and good condition, set aside and clearly marked as the property of the Agency.

7.3. 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, save that the Contractor shall be permitted to retain one copy of documents in order to maintain proper professional records, which shall not be used for any purposes unless expressly agreed by the Agency.

8. MATERIALS

8.1. 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.

8.2. 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.

9. SECURITY

9.1. 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.

9.2. This Condition shall not prejudice the Agency's rights under Condition 15.

10. VARIATIONS

10.1. 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.

10.2. 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.

10.3. 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 reasonable cost directly attributable to the variation shall be borne by the Contractor.

10.4. 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.

10.5. 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.

10.6. The Agency may assign, novate or otherwise dispose of its rights and obligations under the Contract or any part thereof to:

10.6.1. any Contracting Authority; or

10.6.2. 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

10.6.3. 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.

10.7. 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.

11. EXTENSIONS OF TIME

11.1. 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:

11.1.1. 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.

11.1.2. 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.

11.2. 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.

11.3. 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.

12. DEFAULT

12.1. The Contractor shall be in default if he:

12.1.1. fails to perform the Contract with due skill, care, diligence and timeliness;

12.1.2. refuses or neglects to comply with any reasonable written instruction given by the Contract Supervisor;

12.1.3. is in breach of the Contract.

12.2. Where in the reasonable 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.

12.3. 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.

13. TERMINATION

13.1. 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:

13.1.1. fails in the opinion of the Contract Supervisor to comply with (or take reasonable steps to comply with) a Notice under Condition 12.2.

13.1.2. becomes bankrupt or insolvent, or has a receiving order made against him, or makes an 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'

13.2. The Agency may terminate the Contract on written Notice to the Contractor if:

13.2.1. the contract has been subject to a substantial modification which requires a new procurement procedure pursuant to regulation 72(9) of the Regulations;

13.2.2. 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

13.2.3. 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.

14. DETERMINATION

14.1. 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).

14.2. 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.

14.3. 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.

15. INDEMNITY

15.1. 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:

15.1.1. death or injury to any person;

15.1.2. loss or damage to any property excluding indirect and consequential loss;

15.1.3. infringement of third party Intellectual Property Rights which arises as a direct consequence of the actions or negligence of the Contractor, his staff or agents in the execution of the Contract.

15.2. 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.

16. LIMIT OF CONTRACTOR'S LIABILITY

16.1. The limit of the Contractor's liability for each and every claim by the Agency, other than for death or personal injury caused by the Contractors negligence,

whether by way of indemnity or by reason of breach of contract, or statutory duty, or by reason of any tort including negligence shall be:

16.1.1. the sum stated in the Appendix;

16.1.2. if no sum is stated, the Contract Price or five million pounds whichever is the greater.

17. INSURANCE

17.1. 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. If no sum is stated, the value insured shall be £5M (five million pounds.)

17.2. Not used.

17.3. 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.

18. PREVENTION OF FRAUD AND CORRUPTION

18.1. 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.

18.2. 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.

18.3. 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:

18.3.1. 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

18.3.2. recover in full from the Contractor any other loss sustained by the Agency in consequence of any breach of this clause.

18.4. 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.

19. MONITORING AND AUDIT

19.1. 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.

20. CONTRACT PRICE

20.1. The Contract Price will be paid by the Agency to the Contractor as amended by any Variations ordered under Condition 10 (Variations).

20.2. 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.

21. INVOICING AND PAYMENT

21.1. 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.

21.2. 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.

21.3. 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.

22. INTELLECTUAL PROPERTY RIGHTS

22.1. 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.

22.2. All Results shall be the property of the Agency.

22.3. 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:

22.3.1. assigns to the Agency all Resulting Rights

22.3.2. 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.

22.4. 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.

22.5. The Agency undertakes to the Contractor not to use or exploit the Contractor's Prior Rights, save as provided in Condition 22.3.2.

22.6. 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.

22.7. 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.

22.8. 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.

22.9. 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.

22.10. 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.

23. WARRANTY

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

24. 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.

25. ENVIRONMENT, SUSTAINABILITY AND DIVERSITY

25.1. 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.

25.2. 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:

25.2.1. comply with the provisions of the Modern Slavery Act 2015;

25.2.2. pay staff fair wages (and pays its staff in the UK not less than the Foundation Living Wage Rate); and

25.2.3. 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.

25.3. 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:

25.3.1. eliminates discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010;

25.3.2. advances equality of opportunity between people who share a protected characteristic and those who do not; and

25.3.3. fosters good relations between people who share a protected characteristic and those who do not.

25. 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.

26. LAW

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

27. WAIVER

27.1. 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.

27.2. No waiver by the Agency shall be effective unless made in writing.

27.3. No waiver by the Agency of a breach of the Contract shall constitute a waiver of any subsequent breach.

28. ENFORCEABILITY AND SURVIVORSHIP

28.1. 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.

28.2. The following clauses shall survive termination of the Contract, howsoever caused: 13, 14, 15, 22, 23, 24, 27, 29, 30, 31, 32 and 33.

29. DISPUTE RESOLUTION

29.1. 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.

29.2. 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).

29.3. 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.

29.4. 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.

29.5. 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.

29.6. 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.

29.7. 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.

30. GENERAL

30.1. 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.

30.2. 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.

31. FREEDOM OF INFORMATION ACT

31.1. 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').

31.2. The Contractor agrees that:

31.2.1. 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

31.2.2. 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.

31.3. 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.

32. DATA PROTECTION

32.1. 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: [REDACTED]

Title: Yazor Groundwater Model Update

Condition

1 Contract Supervisor

3

[REDACTED]

Address:

[REDACTED]

2 Contractor

[REDACTED] Wood Group UK Ltd

Address:

[REDACTED]

3 Completion

6

Contract Start Date 06/09/2021

Contract End Date 31/03/2022

4 Delivery

11

Address:-

Insert delivery address if different to above

5 Insurance

17

Professional Indemnity Min. Cover £1 million

Third Party Minimum Cover £1 million

Public Liability Min. Cover £1 million

6 Limit on Liability

16

Limit on Contractors Liability £1 million

Specification

1. Introduction

The Yazor Brook arises near Yazor village and flows south-eastwards towards Hereford where it splits into two channels, the Lower Yazor Brook and the Widemarsh Brook (also known as the Eign Brook further downstream). Much of the Yazor Brook catchment is underlain by the Yazor Gravels aquifer, a highly transmissive Fluvio-glacial sand and gravel drift deposit. The central area of the catchment is overlain by Glacial Till (boulder clay). The bedrock at depth comprises the Old Red Sandstone (mudstones and sandstones). The brook has a small but complex catchment, with a number of artificial factors that have influenced surface water flows and groundwater levels. These include a number of groundwater abstractions, mainly for horticulture, and the food and drink industry. There is also the Northern Area Sewer (NAS) operated by Welsh Water which intercepts groundwater. From the 1950's until 2002 the discharge from large scale dewatering operations for a gravel pit at Stretton Sugwas (mid-catchment) provided significant augmentation of low flows in the Yazor Brook. Since the quarry closed the middle and lower stretch of the Yazor Brook has been prone to drying up more frequently in the summer months.

In 2013-14, the existing EA Wales Yazor groundwater model (1990's) was used as the basis for the creation of a new improved model. A 4R Runoff-Recharge model was also developed and incorporated into the updated groundwater model to assess the impacts of groundwater abstractions on the Yazor Brook WFD Surface Water Body, particularly for low flows.

Currently, the NAS acts as a groundwater drain. The model was initially used to run standard CAMS predictive scenarios for an unsealed NAS and a sealed NAS, in order to revisit CAMS Ledger natural flow and groundwater abstraction impact assumptions, in the context of urban drainage influences, to help inform the WFD. Welsh Water undertook repair works in 2016 and lined 819m of the NAS. This was reflected in the associated drain cells in the last update in 2017 to develop predictive scenarios for a Partially Lined NAS. However, due to the short time elapsed since the lining works it was difficult to evaluate any observed recovery in groundwater levels that might have occurred. This can be revisited in the 2021-22 update. In addition to updating the time series data (April 2017-March 2021) there are new reasons to update and recalibrate the updated model.

The Yazor Gravels 2017 groundwater model was used to make changes to the RAM Ledger using naturalised flows based on a Sealed NAS scenario (i.e. no infiltration of groundwater into the sewer). This resulted in a significant change in the Flow Compliance for the Yazor Brook SWB, deteriorating from Band 1 to Band 3, the worst category. The Yazor Brook catchment now meets two out of the three criteria for Serious Damage (Water Act 2003) and there is a separate ongoing hydro-ecology investigation (since 2018) to determine if the third criterion can be confirmed - impacts on ecology from low flows.

Due to the significant change in status of this catchment for flows, this has triggered a need for action to regulate, manage and protect water resources in a more closely scrutinised manner. In order to do this successfully we need a model that is up to date and as fully functioning as possible, so that we can make good decisions and any challenges can be robustly and scientifically defended.

The Rivers Wye and Lugg have been designated as a Priority Catchment for water resources, meaning that abstractors and regulators may need to look for alternative ways to balance the needs of industry with that of the environment. Our model may be needed to test proposed scenarios for this work.

There are three main commercial abstractors in the catchment (two food and drink, one horticulture) and we will be looking to use the modelling results to support work with these companies on managing abstraction impacts in the future.

The 2017 update report created a hypothetical Groundwater Management Unit (GWMU) for the main gravels body, which showed that Fully Licensed abstraction volumes were 144% of long term average (LTA) recharge (from rainfall and mains leakage). Therefore, it has been agreed with Natural Resources Wales and the EA Integrated Environment Planning team that a new bespoke Abstraction Licensing Strategy (ALS) is required specifically for the Yazor Brook catchment, with a view to restricting or preventing additional licensing in the future. The GWMU will need to be updated and formally created to support the new ALS.

The general objective of this project is to update the existing groundwater model that will significantly improve the Environment Agency's ability to make abstraction licensing decisions on a sound scientific basis and, in doing so, protect and/or enhance sensitive surface water features underlain by the Yazor Gravel aquifer. It is anticipated that the groundwater model will inform the groundwater resources assessment for the Yazor Gravel Aquifer and support the catchment abstraction management strategy (CAMS) process in the Upper Wye catchment. It is also expected that the groundwater model will be integral to the investigations and assessments undertaken for the Water Framework Directive.

In addition, it is expected that the groundwater model will provide a tool to aid decision making concerning location-specific water resources issues of the Yazor Brook Catchment Area.

The current project has six main tasks:

1. To update the times-series of the existing Yazor model from April 2017 to March 2021 and convert to MODFLOW6;
2. Convert the model construction from one layer to two or more layers to distinguish between the drift and bedrock. This will enable abstractions that are only taken from the Old Red Sandstone but where it is overlain by drift, to be modelled in the correct horizon and allow for better estimation of vertical flows between the different types of strata;

3. To update and recalibrate the Runoff-Recharge Model and Historical groundwater model using new available data, and answer a number of queries following up on output from the previous version of the model, new information relating to urban drainage, new development at Three Elms, new licenses for NA abstractions, abstraction patterns for three principle abstractors, and some additional items detailed below.
4. To run the updated Runoff-Recharge Model and Groundwater Model for the Baseline Scenario (Recent Actual) and run both Naturalised and Fully Licensed Scenarios, and a number of predictive scenarios to assess the impact of the abstractions on low flows issues and provide possible solutions;
5. Recalculate Water Balance and NSO for the GWMU and daily low flow statistics for the WFD assessment points for WRGIS input. The GWMU will be formalised for use in water resources management and writing a new ALS specific to the Yazor Brook catchment;
6. Model and produce new SPZ's for 5 licences (25 boreholes) and review existing SPZ for one licence (6 boreholes) with documentation.

NB: Where the text below refers to the 'Yazor Brook' this should also be taken to include the Widemarsh Brook and Eign Brook sections of the watercourse, as well as the Lower Yazor Brook offcut from the bifurcation.

2. Project

The project will be undertaken using a phased approach defined by the Tasks described in Section 3 of this specification. The following definitions are used throughout this document:

- Project – This refers to the programme of work to update the regional Yazor Gravels Aquifer groundwater model.
- Task – This refers to a specific part of the Project. All the Tasks are listed in the Contents and described in detail in Section 3.0 of this specification.

The Contractor will be expected to undertake the work outlined in Section 3.0. To ensure that the work is completed to a sufficiently high standard, the Task work will be monitored by a Task Review Team, which will consist of the following people at the Environment Agency:

- | | | |
|---|------------|------------|
| – | [REDACTED] | [REDACTED] |
| – | [REDACTED] | [REDACTED] |
| – | [REDACTED] | [REDACTED] |
| – | [REDACTED] | [REDACTED] |

– [REDACTED]

In addition to this team there will be some limited support to the contractor from the Area Integrated Environment Planning and Groundwater and Contaminated Land Teams for the collection and dissemination of data.

The principal Environment Agency contact for the Contractor will be the Project Manager, who will assist with day-to-day contractual matters and data requests.

Meetings

Project meetings and technical meetings will form the principal method of project review and the Contractor should produce formal minutes for approval by the Project Review Team. Depending on project progress up to one meeting per month may be required. It is anticipated that there will be three project meetings and four technical meetings. The project meetings will include meeting with the Project Review Team and any stakeholders, and the technical meetings will be between the contractors and the Environment Agency project manager and project lead. It is expected that the technical meetings will be held using Microsoft Teams. It is expected that the project meetings will also be held using Microsoft Teams. The first meeting may be held in person subject to Covid rules at the time. Therefore, the contract should cost for three project meetings and four technical meetings. As well as, or in the absence of a meeting, a written report of progress should be circulated to the Project Manager at the end of each month.

2.1 Environment Agency Project Timescale

The Environment Agency Project Manager expects the project to commence at a start-up meeting during the **week commencing 6th September 2021**. The Contractors Project Manager and principal technical expert are expected to be available for the start-up meeting. All of the work for the whole project will need to be completed by the **end of March 2022**. The Contractor should be aware that the project must be completed within this timescale.

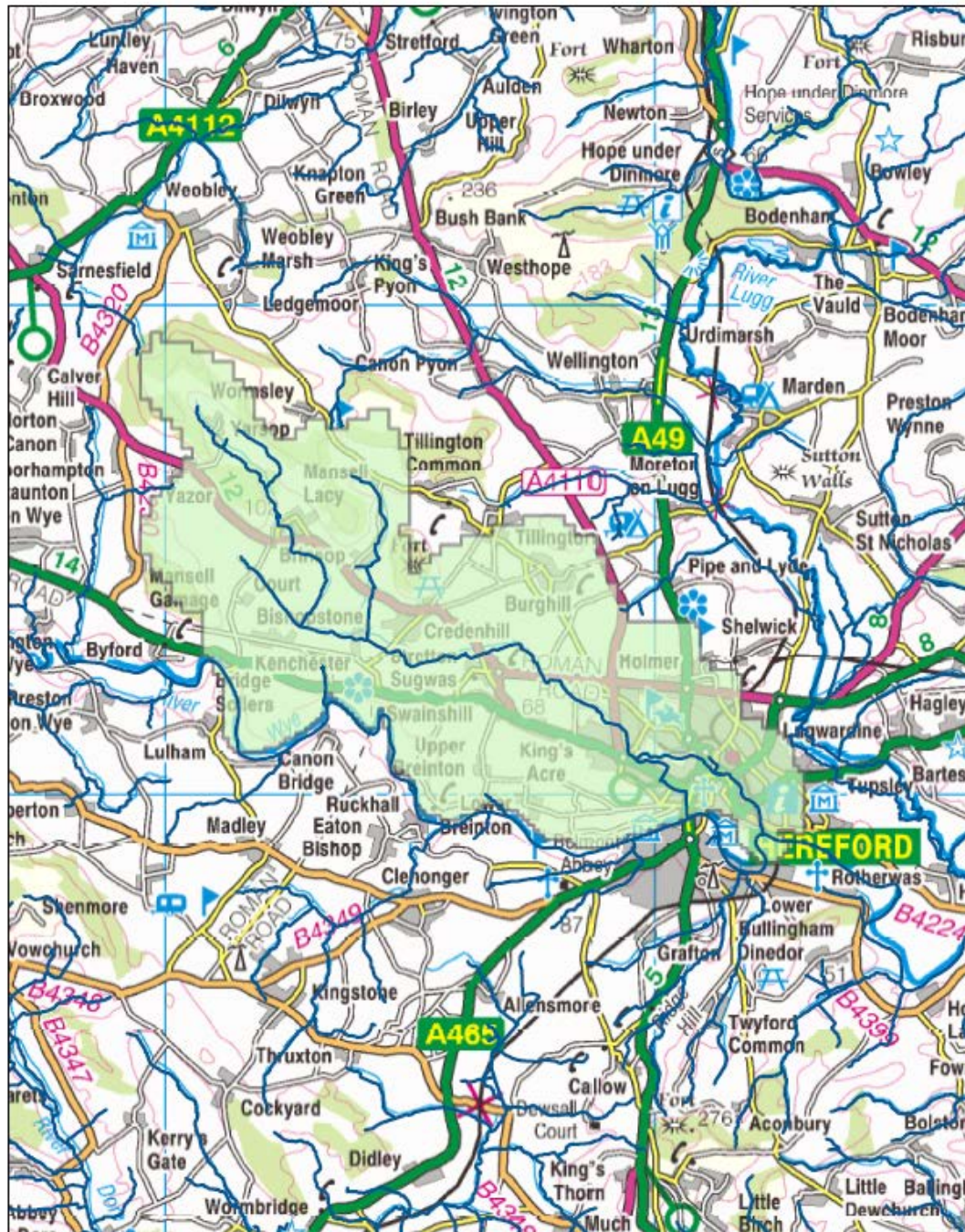


Figure 1: The Model Area

Legend

- River
- Yazor Gravel Model Boundary



3. Task Specification

3.1. Task 1: To update times-series data from April 2017 to March 2021 and rerun the updated model, convert model to MODFLOW6

Purpose

To extend the time series of the existing Yazor runoff recharge and groundwater model (April 2017 to March 2021)

Approach

The Consultant will update the input time series data of the Yazor model. This will involve the following items:

For the runoff-recharge model:

Update the PE data – the last update of the Yazor model in 2017 used MORECS data. We are now using either the EA PET or EA PETI dataset. These data will be provided to the Consultant;

Update the Rainfall data – the last update of the Yazor model in 2017 used CEH ‘GEAR’ Gridded Estimates of Daily Rainfall daily grids, which was a change from the CERF (Continuous Estimation of River Flows) data used in the 2014 model. We are now using the HadUK dataset. Local gauges (Broomy Hill and Credenhill) can be used to assist gap filling if necessary;

Quality checks are required to understand whether the changes in PE and rainfall datasets result in changes to the overall water balances.

Update of Welsh Water (Dwr Cymru) mains leakage data;

For the groundwater model:

Update of the groundwater abstraction time series data using data from National Abstraction Licensing Database (NALD) – this will require infilling of data gaps. The Consultant will check the quality of the data by comparison with the RAM ledger.

Update of surface water abstraction data – this will require infilling of data gaps plus a check of the cut-off used for determination of ‘significant’ licenses (i.e. those that are represented explicitly in the post-processing to obtain simulated surface water flows) by comparison with the RAM ledger.

Update of the surface water discharge data – this will require a check against those discharges represented in the RAM ledger.

For post-processing of the combined model results:

Update of all of the groundwater level hydrographs used for calibration, as well as groundwater level data from around Stretton Sugwas former quarry;

Update of the surface water flow and level hydrographs used for calibration;

Develop a prototype 4R model, using EA PET and HadUK data and also develop a prototype GW model in MODFLOW 6, using an unstructured mesh. Use the outputs from the prototype model relative to observations for:

- a) current aquifer properties with new climate data
- b) high-level changes to aquifer properties

in order to compensate for the new climate data and assess whether a reasonable water balance is achievable (i.e. that stream flows and GWLs are not systematically over or underestimated).

Outputs

The updated Yazor model will be run and the simulation will be compared against the existing historic run. Simulated surface water flows and levels, and groundwater heads will be compared against observed flows and levels at the gauging stations and observed groundwater levels at the main calibration observation boreholes.

Quality assurance

It is critical that the data collated are rigorously quality assured. Any anomalies from comparisons with previous years should be investigated and rectified if necessary. Any zero or unusual returns data should also be investigated.

3.2. Task 2: To produce a GW model in MODFLOW 6 based on the existing MODFLOW-96-VKD model, using an unstructured mesh, and conversion from one layer to two (or more) layers

Purpose

Convert the model construction from one layer to two (or more) layers. This will enable abstractions that are only taking water from the Old Red Sandstone but where it is overlain by drift, to be modelled in the correct horizon. It will also allow for better estimation of vertical flows between the different types of strata.

To recalibrate the historic run for the runoff-recharge and converted groundwater model.

Approach

- Convert the existing groundwater model from one to two (or more) layers using data from the VKD inflection points, as well as geological mapping and borehole records (BGS, Three Elms SI, EA reports and records, etc.).
- Assign abstraction boreholes and monitoring boreholes to the correct horizon where possible. Record which boreholes were able to be correctly assigned and which are unknown – also highlight on a drawing.
- Assess and quantify vertical flows between ORS and gravels, and Till and gravels, define areas where recharge between gravels and ORS occurs and seasonality. Graphical representations on drawings and cross-sections.
- Quantify vertical and horizontal inflows/outflows to GWMU from surrounding sandstones.

Outputs

The multi-layer model historic scenario will be run and the simulation will be compared against the (time series) updated historic run. Simulated surface water flows and levels, and groundwater heads will be compared against observed flows and levels at the gauging stations, and observed groundwater levels at the main calibration observation boreholes.

Assessment of vertical and horizontal flows between horizons.

3.3. Task 3: To update and recalibrate the Runoff-Recharge Model and Historical Groundwater Model using newly available data, and address a variety of queries

Purpose

To recalibrate the runoff-recharge and groundwater model using the newly available data detailed below. Calibration should place emphasis on achieving the best possible comparison with observed groundwater levels and surface water flows/levels, rather than preventing drying-up, as the Fully Licensed (FL) volumes may not be sustainable in reality. Recent Actual volumes are currently well below FL volumes (approx. $\frac{1}{4}$ to $\frac{1}{3}$).

Approach

- Identify technical improvements to be addressed by the model or which may limit the implementation of the model. This will require recalibration of the groundwater model.
- Further refinements of model parameters based on the previous sensitivity analysis in 2017.
- Define main feeder channel as southernmost option that arises near to Yazor village. Comparison with input from major tributaries from the north.
- Assess information on ephemeral springs on the valley sides, as provided by a local resident.
- Additional drain cells for wider area of sewer network? (depending on info from DCWW).
- Amend location of Lower Yazor outfall based on Welsh Water map.
- Add in details from EA Wales Environment Officer notes on urban drainage, e.g. Belvedere Brook route, nature and extent of drying up.
- Add in details from Herefordshire Council 1972 report and maps on flood management – validate against other existing information.
- Update flow relationship at bifurcation based on recent spot gaugings upstream and downstream of split.
- Incorporate data from Ledbury Road level gauging station. Update flow rating at Ledbury Road level gauge based on recent spot gaugings.
- Calibrate model using recent spot gauging data elsewhere.
- Include note on flow rating issues at the Three Elms gauging station.
- Perform sensitivity analysis on recharge/runoff for SuDS options at the proposed Three Elms housing development (1200 houses + community uses + employment zone) – i.e. current situation (arable) compared to completed development with infiltration SuDS (roof-water only, all runoff aside from employment zone), or discharge all runoff to Yazor Brook. Assess changes to aquifer recharge and Yazor Brook flows.
- Tabulate groundwater and surface water licensed abstraction volumes by purpose: annual/ daily/ seasonality/ percentage of total.
- Incorporate New Authorisations license information (GW: 2 licenses with 2 new boreholes each; 1 license with 3 existing boreholes; SW: 1 new license).

- Assess abstraction patterns by individual boreholes for the three main abstractors over the last 5 years. Incorporate additional information provided by abstractors if available.
- Correlate model predictions with estimates provided by Welsh Water regarding reduced groundwater infiltration following lining of 819m of the NAS undertaken in October 2016.
- Estimate proportion of groundwater flow from upper catchment that flows towards the River Wye upstream of the Breinton Ridge and variation with average/ wet/ dry and Nat/ RA/ FL/ 50% FL/ 75% FL. Identify locations where groundwater baseflow to River Wye occurs, and give proportion for each location.
- Assessment of volume and locations for groundwater baseflow into Yazor-Widemarsh-Eign Brook, and variation with average/ wet/ dry and Nat/ RA/ FL/ 50%FL/ 75% FL.
- Quantify and locate where stream leakage into aquifer occurs, including average/wet/dry and Nat/ RA/ FL/ 50% FL/ 75% FL variation, and compare volumes to abstraction impacts on flows in the brook.
- Initial assessment of the potential for groundwater abstraction impact on eight GWDTE's (1 SSSI; 6 LWS's, one non-designated) in the model area in terms of drawdown and depth to groundwater. NB: No site-specific water level is monitoring available. Discuss results along with any ecological information that may be provided by the EA or other parties.
- Assess the potential impacts of climate change on the catchment.

Outputs

The updated historic scenario will be run and the simulation will be compared against the existing historic run. Simulated surface water flows and levels will be compared against observed flows/ levels at the gauging stations, and simulated groundwater heads compared with observed groundwater levels at the main calibration observation boreholes.

Additional variations due to potential climate change impacts should be assessed and discussed.

All of the above bullet points should be discussed in the report and represented graphically and/or tabulated where appropriate.

Aside from the Historic run, the additional assessments should be based on the post-quarry dewatering period (i.e. from 2003) in order to best reflect the current situation. Each of the Unsealed NAS, Partially Sealed NAS, and Sealed NAS scenarios should be used where appropriate.

3.4. Task 4: To run the updated Runoff-Recharge Model and Groundwater Model for Standard Scenarios and bespoke scenarios

The updated Yazor groundwater model will be used to assess the impact of the abstractions on the rivers, streams and groundwater levels.

The Consultant will update the Yazor model for standard scenarios with the following categories and for the time period after quarry dewatering ceased, 2003-2021:

Table 3.4.1: Standard Scenario Categories

	Naturalised	RA	50% FL	75% FL	100% FL
Unsealed NAS	√	√	√	√	√
Partially Sealed NAS	√	√	√	√	√
Sealed NAS	√	√	√	√	√

The consultant will also run six additional predictive simulations and compare results to the Standard Scenarios (Unsealed NAS, Partially Sealed NAS and Sealed NAS scenarios). This work may be undertaken using the Environment Agency's BAM Tool (Batch Abstraction Modelling) if possible. The time period shall cover post-quarry dewatering from 2003-2021.

Assess the specific impacts (RA, FL) of abstractions (individually and combined) that are thought to be only taking from the ORS, on groundwater levels in the gravels, and surface water flows and levels in the Yazor Brook (including seasonal variation).

- Hereford Racecourse (S32-3 stage only)
- Hereford Livestock Market (WA/055/0016/001)
- 41 St. Owen's Street (19/55/15/0446)
- Magna Castra Farm – East (19/55/16/0041)
- Magna Castra Farm – West (19/55/16/0041)

Using the BAM tool with the Unsealed NAS, Partially Sealed NAS and Sealed NAS Scenarios (2003-2021):

- Assess combined and individual impacts (RA, 50% FL, 75% FL, 100% FL) of borehole usage (approx. 31 boreholes) of all abstractions. Use the tool to test six alternative operational configurations for the two main food and drink abstractors to determine whether the impacts on surface water flows (Three Elms gauge and AP2 Eign Brook) can be managed in a better way.

Assess the additional impacts from the New Authorisations licenses (individual boreholes x 7, and in combination) - (RA, 50% FL, 75% FL, 100% FL) the BAM tool should include impacts to both SW Body GW-SW flows and Wetland Cells.

Graphical output and discussion from modelling of CAMS standard scenarios (Unsealed/ Partially Sealed/ Sealed NAS) shall include the following, and any other relevant outputs that were included in the 2017 report:

RA Q95 EFI flow compliance

CAMS Resource Availability colours

Impacts: Stress period based flows/ daily synthesized flows, EFI, flow impacts,

FDC's for Eign Brook AP2/17 and Three Elms gauge.

Stress period flow duration curve summary statistics for AP2 Eign Brook and Three Elms gauge, in Ml/d (Q30, Q50, Q70, Q95, Q99 – Historic during/after quarry;

Unsealed NAS/ Partially Sealed NAS/ Sealed NAS – Naturalised/ EFI/ RA/50% FL/ 75% FL/ 100% FL

Stress period natural flow duration curve statistics and impact information for AP2 Eign Brook – sealed NAS (and any other info required for CAMS Ledger update with modelled flows)

Accretion Profiles (Average, Dry, Wet, Q95, Q99 periods)

Impacts on Boundary Conditions (RA, 50% FL, 75% FL, 100% FL)

Groundwater level impact and depth to water (Average, Dry, Wet)

Long Sections of whole watercourse, lower watercourse, and NAS showing geology and features/ locations of interest: elevations relative to groundwater levels

(maximum, minimum) – indicate modelling errors

Groundwater level contours should be provided for average, wet, dry, and very dry periods post-2003. Also for Naturalised/ RA/ 50% FL/ 75% FL/ 100% FL (post-2003).

Groundwater Divide estimation (Average/ Dry/ Wet; Naturalised/ RA/ FL; Unsealed NAS/ Partially Sealed NAS/ Sealed NAS)

Assess risks of increasing abstraction volumes from RA to 50% FL, 75% FL, 100% FL.

Assess any changes in GWL's or SW flows that could be correlated to the sewer lining works.

Include a discussion on how observed and modelled flows relate to the WFD status (flows and ecology) and current Reasons for Not Achieving Good (RNAG's)

Ecological Status. Also with reference to potential Serious Damage under the Water Act 2003.

Detailed water balances for:

Historical: 1970-2002; 2003-2021

Naturalised

Unsealed NAS (1970-2002; 2003-2021)

Partially Sealed NAS (1970-2002; 2003-2021)

Sealed NAS (1970-2002; 2003-2021)

Tabulated data as presented in Tables 2 and 3 (p.20-23) of PDF report 'Cam and Bedford Ouse Groundwater Investigation, Final Report: Rhee and Cam Catchments' (see below) but for the Yazor Gravels and Old Red Sandstone strata. Table 3 to have extra columns to give RA, 50% FL, 75% FL and 100% FL data for 'Unsealed NAS', 'Partially Sealed NAS', and 'Sealed NAS'.

Table 2 Selected Elements of the Water Balance for the Reporting Area

Table 3 Summary of LTA Abstraction Impacts on Water Resources the Reporting Area

Table 2 Selected Elements of the Water Balance for the Reporting Area

Component (MI/d)	Long Term Average (1970- 2010)	Dry Period (September 1990)	Average Period (July 1995)	Wet Period (March 1988)
------------------	--------------------------------------	-----------------------------------	----------------------------------	----------------------------

Component (MI/d)
UNSATURATED ZONE
Rainfall
Potential Evapotranspiration
Actual Evapotranspiration
Runoff
Interflow
SATURATED SYSTEM
Water Table
Total recharge to water table (infiltration recharge plus runoff recharge)
Total recharge to water table plus leakage from streams to groundwater
Chalk
Recharge to water table in Chalk (infiltration plus runoff recharge)
Leakage from streams to Chalk
Upwards capillary flow from water table in Chalk
Vertical downwards flow into Chalk
Total recharge to Chalk (infiltration and runoff recharge direct to the Chalk plus vertical downwards flow into the aquifer plus leakage from streams to the Chalk)
Total input to the Chalk (total recharge to Chalk (above) plus lateral inflow to Chalk)

Lateral groundwater inflow to Chalk
Lateral groundwater outflow from Chalk
Net lateral groundwater flow in Chalk (positive = inflow)
Storage change in the Chalk (positive=release from storage)
Groundwater abstractions from Chalk
Vertical downwards flow through the base of Chalk
Woburn Sands
Recharge to the water table in the Woburn Sands (infiltration plus runoff recharge)
Leakage from streams to the Woburn Sands
Upwards capillary flow from the water table in the Woburn Sands
Vertical downwards flow into Woburn Sands
Total recharge to Woburn Sands (infiltration and runoff recharge direct to the Woburn Sands plus vertical downwards flow into Woburn Sands plus leakage from streams to the Woburn Sands)
Total input to the Woburn Sands (total recharge to Woburn Sands (above) plus lateral inflow to Woburn Sands)
Lateral groundwater inflow to Woburn Sands
Lateral groundwater outflow from Woburn Sands
Net lateral groundwater flow in Woburn Sands (positive = inflow)
Storage change in the Woburn Sands (positive=release from storage)
Groundwater abstractions from Woburn Sands
FLows
Surface water abstractions
Surface water discharges
Leakage from streams to groundwater
Groundwater discharge to streams
Baseflow (groundwater discharge to streams minus leakage from streams to groundwater)
Total river flow (runoff plus interflow, plus baseflow plus surface water discharges minus surface water abstractions)

Table 3 **Summary of LTA Abstraction Impacts on Water Resources the Reporting Area**

	Naturalised	Historical	Recent Actual	Fully Licensed
IMPACTS ON GROUNDWATER				
<i>Saturated System</i>				
Total recharge to water table plus leakage from streams to groundwater (MI/d)				
Total groundwater abstraction (MI/d)				
Total groundwater abstraction as a % of recharge to water table plus leakage from streams to groundwater (%)				
<i>Chalk</i>				
Recharge to water table in Chalk (infiltration plus runoff recharge) (MI/d)				
Leakage from streams to groundwater in Chalk (MI/d)				
Vertical downwards flow to Chalk (MI/d)				
Total recharge to Chalk (infiltration and runoff recharge direct to Chalk plus leakage from streams to Chalk plus vertical downwards flow into aquifer) (MI/d)				
Total input to Chalk (total recharge to Chalk (above) plus lateral inflow to Chalk) (MI/d)				
Lateral groundwater inflow to Chalk (MI/d)				
Lateral groundwater outflow from Chalk (MI/d)				
Net lateral groundwater flow in Chalk (positive=inflow) (MI/d)				
Vertical downward flow from base of Chalk (MI/d)				
Effective resource in the Chalk: total recharge to Chalk plus net lateral groundwater flow in Chalk minus vertical downwards flow through base of Chalk (MI/d)				
Groundwater abstraction from Chalk (MI/d)				
Groundwater abstraction from Chalk as % of effective groundwater resource in Chalk (%)				
<i>Woburn Sands</i>				
Recharge to water table in Woburn Sands (infiltration plus runoff recharge) (MI/d)				
Leakage from streams to groundwater in the Woburn Sands (MI/d)				
Vertical downwards flow to Woburn Sands (MI/d)				
Total recharge to Woburn Sands (infiltration and runoff recharge direct to Chalk plus leakage from streams to Chalk plus vertical downwards flow into aquifer) (MI/d)				
Total input to Woburn Sands (total recharge to Chalk (above) plus lateral inflow to Chalk) (MI/d)				
Lateral groundwater inflow to Woburn Sands (MI/d)				
Lateral groundwater outflow from Woburn Sands (MI/d)				

Net lateral groundwater flow in Woburn Sands (positive=inflow) (Ml/d)
Effective resource in Woburn Sands: total recharge to water table in Woburn Sands plus net lateral groundwater flow in Woburn Sands (Ml/d)
Groundwater abstraction from Woburn Sands (Ml/d)
Groundwater abstraction from Woburn Sands as % of effective resource in Woburn Sands (%)
IMPACTS ON FLOWS
Surface water abstractions (Ml/d)
Surface water discharges (Ml/d)
Leakage from streams to groundwater (Ml/d)
Groundwater discharge to streams (Ml/d)
Baseflow (groundwater discharge to streams minus leakage from streams to groundwater) (Ml/d)
Total river flow (runoff plus interflow, plus baseflow plus surface water discharges minus surface water abstractions) (Ml/d)
Groundwater abstraction as % of naturalised total flow (%)
Groundwater abstraction as % of naturalised baseflow (%)
Scenario total flow as a % of naturalised (%)
Scenario baseflow as a % of naturalised (%)

All input/output and associated pre/post-processing files/tools of the predictive simulations should be delivered to the Environment Agency on completion of the project.

3.5. Task 5: To produce Recharge and Natural Summer Outflow (NSO, Q85) for the 'Yazor Gravels' Groundwater Management Unit (GWMU) and also daily low flow statistics for all the WFD assessment points (and Three Elms gauge) for WRGIS input

The consultant will review the hypothetical 'Yazor Gravels' GWMU that was constructed for the last update in 2017, with a view to it being formalised and used to assist the writing of a new bespoke Abstraction Licensing Strategy (ALS) for the Yazor Brook catchment to sit alongside the overall River Wye ALS. Abstractions from the underlying ORS may be included if deemed appropriate.

The consultant will use the updated model and produce recharge for the GWMU, Natural Summer flow (Q85), water balance, and daily low flow statistics for the GWMU and for all WFD assessment points (and Three Elms gauge) for WRGIS input to review WFD status.

The water balance shall be the long-term average for these periods: 1970-2021; 1970-2002; 2003-2021.

3.6. Task 6: To model new Groundwater Source Protection Zones (SPZ's) for five licenses and review the modelling for one existing SPZ

The consultant will produce new SPZ's for five licenses (25 boreholes) operated by food and drink companies. Boreholes may be grouped for each license where considered appropriate.

The consultant will also review the existing SPZ for one license (6 boreholes, grouped) that was originally produced by Environment Agency Wales in 1992. Consideration should be given as to whether the SPZ3 should be the entire outcrop area as for 'heavily exploited aquifers' defined in the guidance.

The consultant will produce all relevant information and GIS layers required for upload onto the Environment Agency's National database.

3.7. Reporting

Following the successful completion of the six tasks, the Contractor shall produce a final report which would be suitable for presentation at a Public Inquiry.

The Contractor shall also issue an additional pdf version for external use that has been redacted of all sensitive and personal information.

Purpose

The final report will be the Environment Agency's report and the consultant will be writing on behalf of the Environment Agency. The report will explain clearly how the model has been updated, calibrated and interpreted from the predictive scenarios. Any uncertainties or inadequacies of the model should be clearly stated, and

possible methods of resolving these uncertainties (by field work and/or further model development) should be explained in detail.

Approach

The report with Appendices (such as the log of the important model runs and complete sets of figures) should provide a comprehensive record of the previous tasks. It should be sufficiently complete for the Environment Agency or another Consultant to update and improve the model.

Outputs

The final report will comprise well linked PDF reports (including redacted version) and a MS Word format for the text. The report shall be capable of having individual pages or sections extracted, subject to the use of a security password.

A draft report should be issued in electronic format (MS Word). The Consultant shall state clearly within the report the assumptions and limitations made within the final calibrated model.

The standards of reporting will be high and a style guide will be used and adhered to rigorously. This will include:

- formats of tables and headings;
- agreed colours, scales for maps and graphs;
- a glossary of agreed technical terms.

It is emphasised that unclear, imprecise or loose technical/scientific terminology will not be acceptable. The style guide will be developed during the course of the Task. The Consultant should note that narrative style is not acceptable unless it is critical for explaining the hydrogeological understanding. Tables and graphical representation of data shall be used to support the text as much as possible.

This draft report will be presented and discussed at a progress meeting with the Project Review Team. The Consultant should allow up to four weeks (term-time) for consideration by the Environment Agency of the draft report and any modifications required for the final report. The report shall require a greater level of interchange between the Contractor and the Environment Agency as such that the Contractor shall anticipate at least two draft versions of the report. The title of the draft reports shall reflect the draft version number.

Following the approval by the Agency Project Manager that further drafts are not required the Contractor shall issue within 15 days of approval a well-linked pdf version of the report.

3.8. Produce ‘ModelMap’ and ‘Protected Water Features’ (PWF) ArcMap GIS projects

Purpose

ModelMap: To display an ‘interactive model report’.

PWF GIS: To display output related to the environmental targets we need to meet on rivers and in wetlands.

Output

ModelMap GIS Project including layers as for the 2017 ModelMap, and relevant additional layers from the Anglian ModelMaps (full list of layers available on request).
PWF GIS Project including layers as in the Anglian PWF's (full list of layers available on request).

Data Protection Act 1998

For the purposes of the Act the Environment Agency is the data controller.
The personal information that we have asked you to provide on individuals (data subjects) that will be working for you on any resultant contract will be used in assessing your Tender.

The Agency may monitor the performance of the individuals during the execution of the contract and the results of our monitoring, together with the information that you have provided, will be used in determining what work is allocated under the contract, and in any renewal of the contract or in the award of future contracts of a similar nature. The information will not be disclosed to anyone outside the Agency without the consent of the data subject, unless the Agency is required by law to make such disclosures.

These provisions will apply to any person provided by yourselves to do work for us in addition or substitution after the contract has been awarded.

Key Personnel

The Key Personnel identified by the Contractor to deliver the Specification of Requirements are as follows:

A large rectangular area of the document is completely redacted with black ink, obscuring the names and details of the key personnel mentioned in the preceding text.

Pricing Schedule

The price due to the Contractor in consideration for the provision of the Services is £62,330. This includes the removal of task 2 and the inclusion of the optional priced tasks described below and in the pricing schedule.

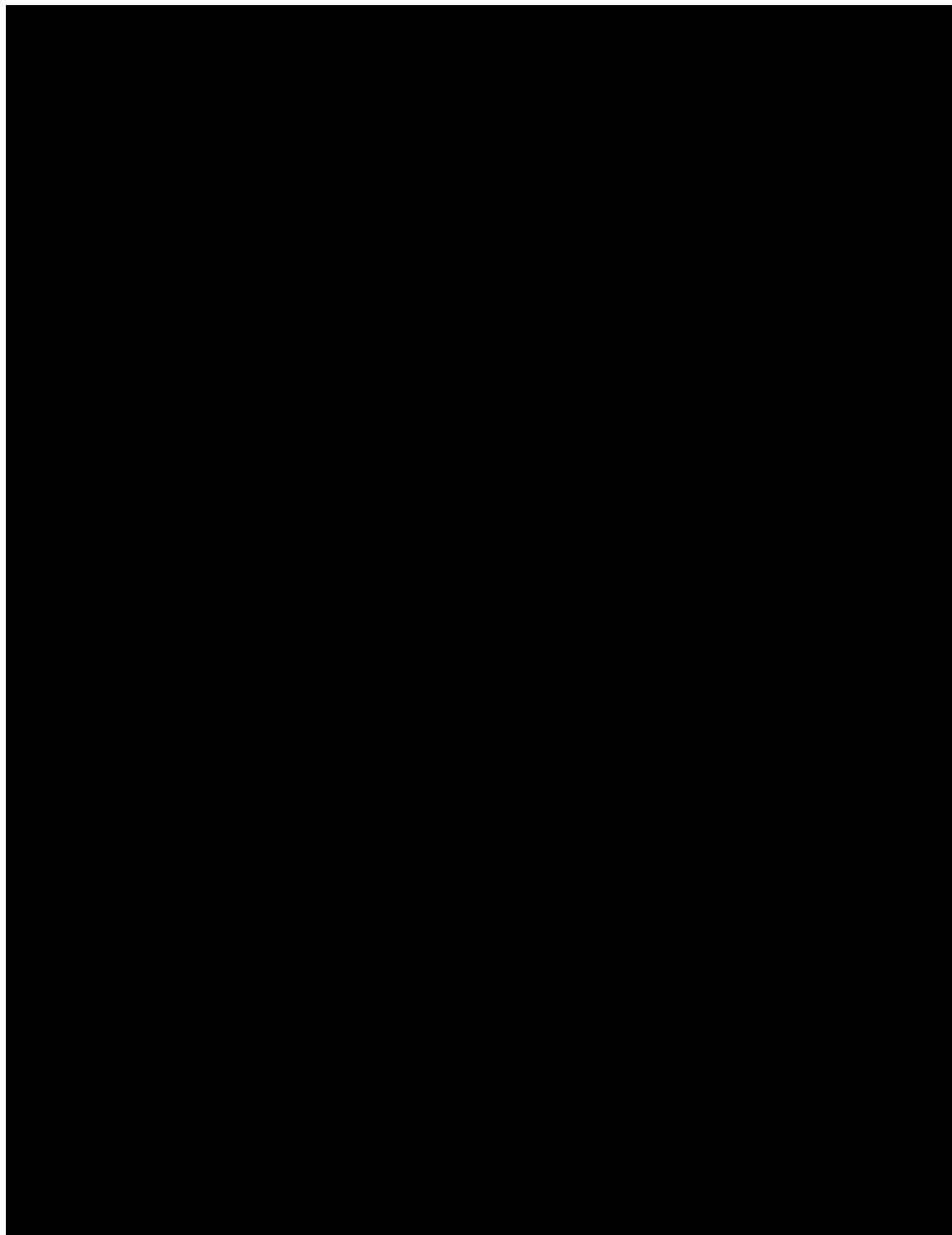
Payment will be made on completion, delivery and acceptance of the milestones described in the following payment schedule and in line with the payment conditions outlined in this Contract:

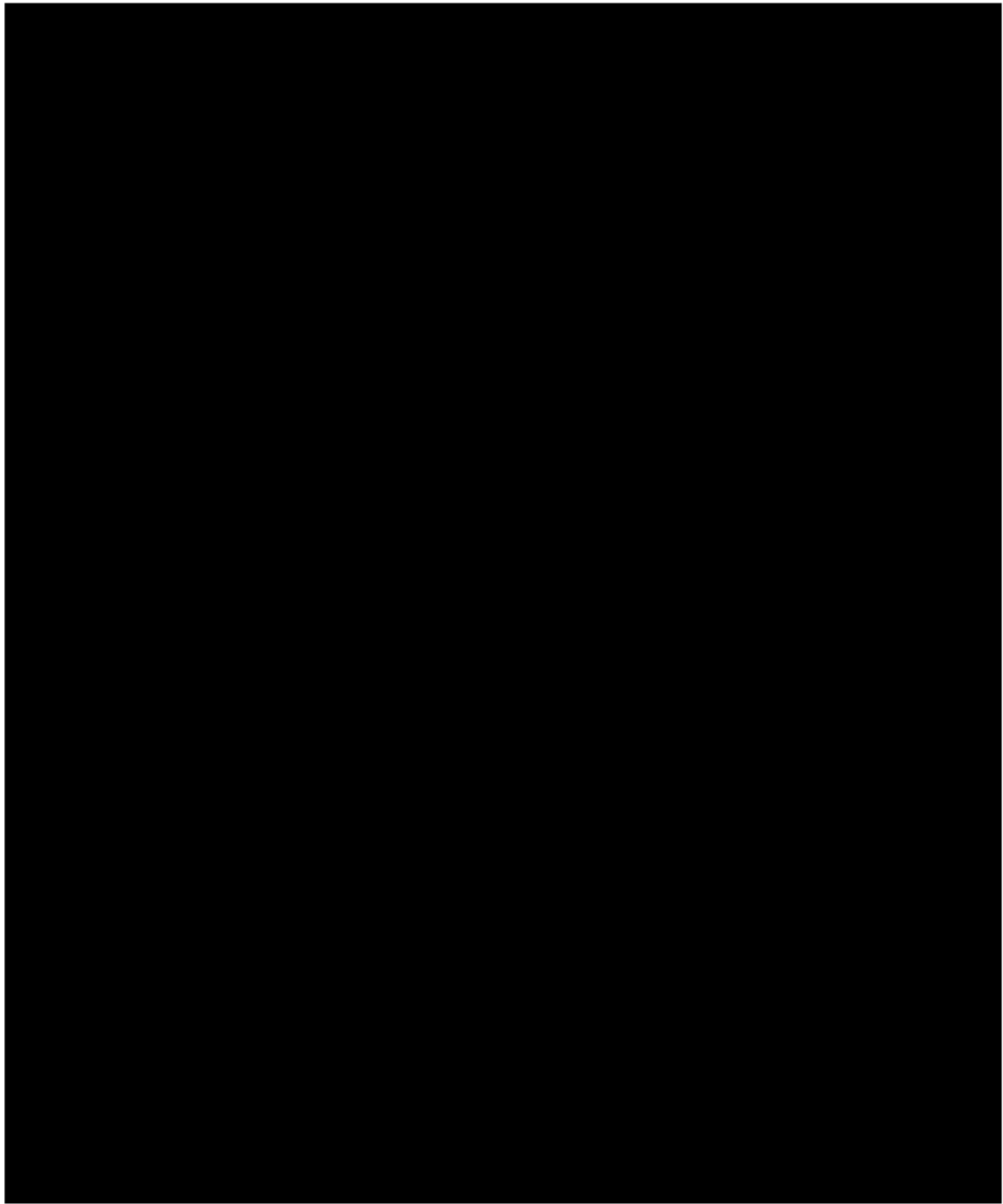
Summary of Tasks and Milestones			
Task	Summary	Completion Date w/c	Payment Milestone value (£ ex VAT)
Task 1	To update the times-series of the existing Yazor model from April 2017 to March 2021 and convert to MODFLOW6;		
Task 2	Develop an unstructured Voronoi grid for the model, including conversion to multiple layers		
Task 3	To update and recalibrate the Runoff-Recharge Model and Historical groundwater model using new available data, and answer a number of queries.		
Task 3a	Five extra refinement runs		
Task 4	To run the updated Runoff-Recharge Model and Groundwater Model for the Baseline Scenario (Recent Actual) and run both Naturalised and Fully		

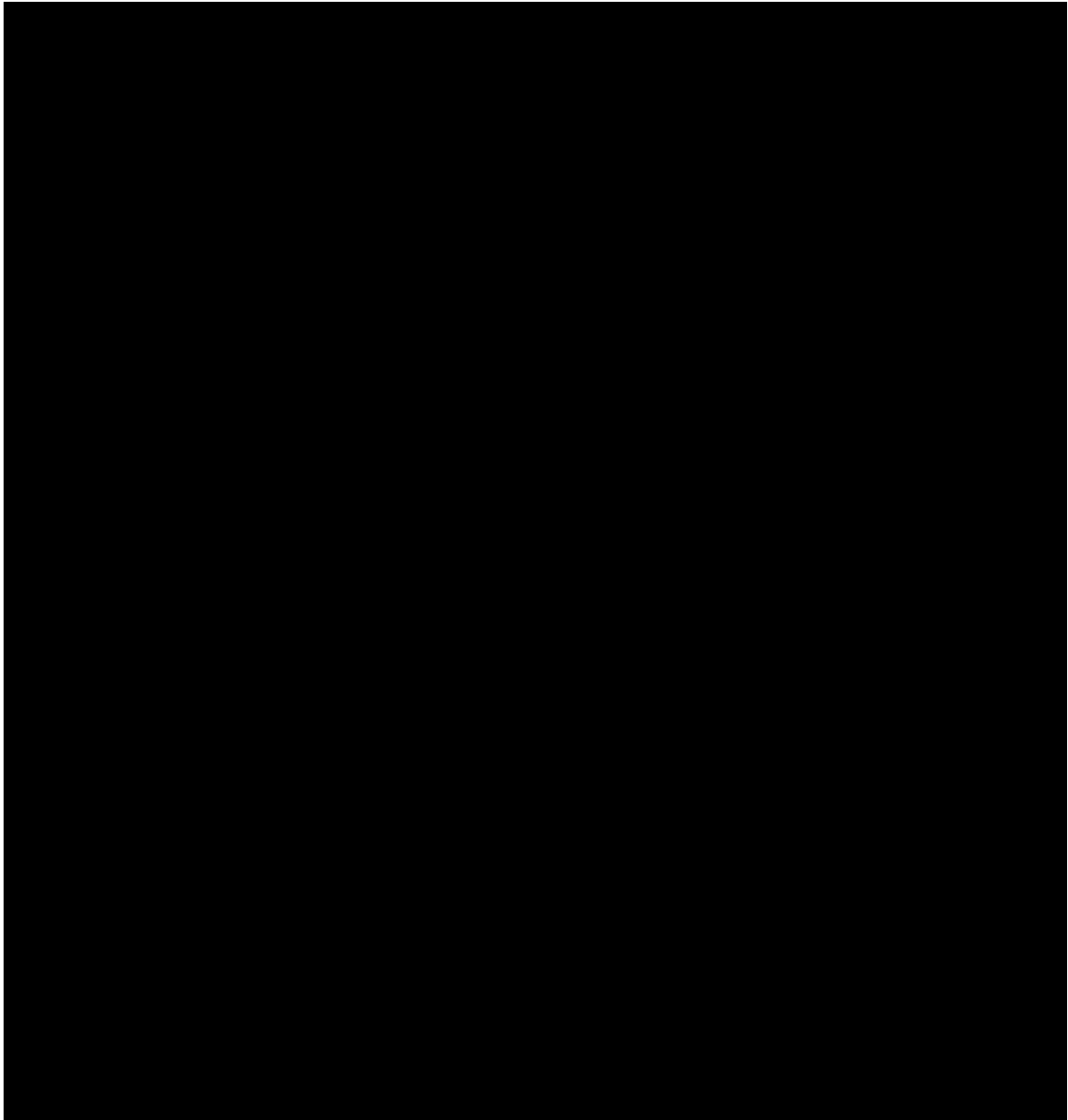
Summary of Tasks and Milestones			
	Licensed Scenarios, and a number of predictive scenarios		
Task 5	Recalculate Water Balance and NSO for the GWMU and daily low flow statistics for the WFD assessment points for WRGIS input		
Task 6	Model and produce new SPZ's for 5 licences (25 boreholes) and review existing SPZ for one licence (6 boreholes) with documentation		
Task 7	Report and deliver (including management)		
Task 8	Handover training		

Programme

The diagram illustrates a timeline from 2021 to 2022. At the top, a horizontal bar is divided into a blue segment on the left and a red segment on the right. Below this, a main timeline bar shows a red segment for 2021 and a blue segment for 2022. The bottom section is a detailed grid with columns for 2021 and 2022. The 2021 section is divided into four quadrants, and the 2022 section is divided into two quadrants. The grid contains various colored blocks (red, blue, green, yellow) representing different activities or events.







CHANGE CONTROL SCHEDULE

Contract Change Note ("CCN")

CCN Number	01
Contract Reference Number & Title	
Variation Title	
Number of Pages	

WHEREAS the Contractor and the Agency entered into a contract for the (title of contract) dated (date) (the "Original Contract") and now wish to amend the Original Contract

IT IS AGREED as follows

1. The Original Contract shall be amended as set out in this Change Control Notice:

Change Requestor / Originator		
Summary of Change		
Reason for Change		
Revised Contract Price	Original Contract Value	
	Previous Contract Changes	
	Contract Change Note	
	New Contract Value	
Revised Payment Schedule	No change to costing schedule.	
Revised Specification	The specification will change from that drafted in the original contract to the text drafted in the summary section above.	
Revised Contract Period		
Change in Contract Manager(s)	N/A no change to contract manager	
Other Changes	N/A no other changes	

2. Save as amended all other terms of the Original Contract shall remain effective.
3. This CCN takes effect from the date on which both Parties communicate acceptance of its terms via Bravo.

Authorised Authority Representative

Name.....

Date.....

Defra Commercial Officer
(FSOD Sign off up to £500k)

Name

Date.....

Authorised Contractor Representative.....

Name.....

Date.....

Data Protection Schedule

Definitions – the definitions in this Schedule and the Contract shall apply:

Annex 1: the Schedule of Processing, Personal Data and Data Subjects attached to this Data Protection Schedule.

Annex 2: Joint Controller Agreement (where required).

Party: a Party to this Contract.

Data Protection Impact Assessment: an assessment by the Controller of the impact of the envisaged processing on the protection of Personal Data.

Controller, Processor, Data Subject, Personal Data, Personal Data Breach, Data Protection Officer: takes the meaning given in the GDPR.

Data Loss Event: any event that results, or may result, in unauthorised access to Personal Data held by the Processor under this Contract, and/or actual or potential loss and/or destruction of Personal Data in breach of this Contract, including any Personal Data Breach.

Data Subject Request: a request made by, or on behalf of, a Data Subject in accordance with rights granted pursuant to the Data Protection Legislation to access their Personal Data.

Joint Controllers: where two or more Controllers jointly determine the purposes and means of processing. **Protective Measures:** appropriate technical and organisational measures which may include: the use of pseudonyms and encrypting Personal Data, ensuring confidentiality, integrity, availability and resilience of systems and services, ensuring that availability of and access to Personal Data can be restored in a timely manner after an incident, and regularly assessing and evaluating the effectiveness of the such measures adopted by it including those outlined in Annex 1 (Security).

Sub-processor: any third Party appointed to process Personal Data on behalf of the Processor related to this Contract.

1. DATA PROTECTION

- 1.1 The Parties acknowledge that for the purposes of the Data Protection Legislation, the Agency is the Controller and the Contractor is the Processor unless otherwise specified in Annex 1. The only processing that the Processor is authorised to do is listed in Annex 1 by the Controller and may not be determined by the Processor.
- 1.2 The Processor shall notify the Controller immediately if it considers that any of the Controller's instructions infringe the Data Protection Legislation.

- 1.3 The Processor shall provide all reasonable assistance to the Controller in the preparation of any Data Protection Impact Assessment prior to commencing any processing. Such assistance may, at the discretion of the Controller, include:
- (a) a systematic description of the envisaged processing operations and the purpose of the processing;
 - (b) an assessment of the necessity and proportionality of the processing operations in relation to the Services;
 - (c) an assessment of the risks to the rights and freedoms of Data Subjects; and
 - (d) the measures envisaged to address the risks, including safeguards, security measures and mechanisms to ensure the protection of Personal Data.
- 1.4 The Processor shall, in relation to any Personal Data processed in connection with its obligations under this Contract:
- (a) process that Personal Data only in accordance with Annex 1, unless the Processor is required to do otherwise by Law. If it is so required the Processor shall promptly notify the Controller before processing the Personal Data unless prohibited by Law;
 - (b) ensure that it has in place Protective Measures, which are appropriate to protect against a Data Loss Event, which the Controller may reasonably reject (but failure to reject shall not amount to approval by the Controller of the adequacy of the Protective Measures), having taken account of the:
 - (i) nature of the data to be protected;
 - (ii) harm that might result from a Data Loss Event;
 - (iii) state of technological development; and
 - (iv) cost of implementing any measures;
 - (c) ensure that :
 - (i) the Contractor Personnel do not process Personal Data except in accordance with this Contract (and in particular Annex 1);
 - (ii) it takes all reasonable steps to ensure the reliability and integrity of any Contractor Personnel who have access to the Personal Data and ensure that they:
 - (A) are aware of and comply with the Processor's duties under this clause;
 - (B) are subject to appropriate confidentiality undertakings with the Processor or any Sub-processor;

- (C) are informed of the confidential nature of the Personal Data and do not publish, disclose or divulge any of the Personal Data to any third Party unless directed in writing to do so by the Controller or as otherwise permitted by this Contract; and
 - (D) have undergone adequate training in the use, care, protection and handling of Personal Data; and
- (d) not transfer Personal Data outside of the EU unless the prior written consent of the Controller has been obtained and the following conditions are fulfilled:
 - (i) the Controller or the Processor has provided appropriate safeguards in relation to the transfer (whether in accordance with GDPR Article 46 or LED Article 37) as determined by the Controller;
 - (ii) the Data Subject has enforceable rights and effective legal remedies;
 - (iii) the Processor complies with its obligations under the Data Protection Legislation by providing an adequate level of protection to any Personal Data that is transferred (or, if it is not so bound, uses its best endeavours to assist the Controller in meeting its obligations); and
 - (iv) the Processor complies with any reasonable instructions notified to it in advance by the Controller with respect to the processing of the Personal Data;
- (e) at the written direction of the Controller, delete or return Personal Data (and any copies of it) to the Controller on termination of the Contract unless the Processor is required by Law to retain the Personal Data.

1.5 Subject to clause 1.6, the Processor shall notify the Controller immediately if it:

- (a) receives a Data Subject Request (or purported Data Subject Request);
- (b) receives a request to rectify, block or erase any Personal Data;
- (c) receives any other request, complaint or communication relating to either Party's obligations under the Data Protection Legislation;
- (d) receives any communication from the Information Commissioner or any other regulatory authority in connection with Personal Data processed under this Contract;
- (e) receives a request from any third Party for disclosure of Personal Data where compliance with such request is required or purported to be required by Law; or
- (f) becomes aware of a Data Loss Event.

- 1.6 The Processor's obligation to notify under clause 1.5 shall include the provision of further information to the Controller in phases, as details become available.
- 1.7 Taking into account the nature of the processing, the Processor shall provide the Controller with full assistance in relation to either Party's obligations under Data Protection Legislation and any complaint, communication or request made under clause 1.5 (and insofar as possible within the timescales reasonably required by the Controller) including by promptly providing:
- (a) the Controller with full details and copies of the complaint, communication or request;
 - (b) such assistance as is reasonably requested by the Controller to enable the Controller to comply with a Data Subject Request within the relevant timescales set out in the Data Protection Legislation;
 - (c) the Controller, at its request, with any Personal Data it holds in relation to a Data Subject;
 - (d) assistance as requested by the Controller following any Data Loss Event;
 - (e) assistance as requested by the Controller with respect to any request from the Information Commissioner's Office, or any consultation by the Controller with the Information Commissioner's Office.
- 1.8 The Processor shall maintain complete and accurate records and information to demonstrate its compliance with this clause. This requirement does not apply where the Processor employs fewer than 250 staff, unless:
- (a) the Controller determines that the processing is not occasional;
 - (b) the Controller determines the processing includes special categories of data as referred to in Article 9(1) of the GDPR or Personal Data relating to criminal convictions and offences referred to in Article 10 of the GDPR; or
 - (c) the Controller determines that the processing is likely to result in a risk to the rights and freedoms of Data Subjects.
- 1.9 The Processor shall allow for audits of its Data Processing activity by the Controller or the Controller's designated auditor.
- 1.10 Each Party shall designate its own data protection officer if required by the Data Protection Legislation.
- 1.11 Before allowing any Sub-processor to process any Personal Data related to this Contract, the Processor must:

- (a) notify the Controller in writing of the intended Sub-processor and processing;
 - (b) obtain the written consent of the Controller;
 - (c) enter into a written agreement with the Sub-processor which gives effect to the terms set out in this Schedule such that they apply to the Sub-processor; and
 - (d) provide the Controller with such information regarding the Sub-processor as the Controller may reasonably require.
- 1.12 The Processor shall remain fully liable for all acts or omissions of any of its Sub-processors.
- 1.13 The Controller may, at any time on not less than 30 Working Days' notice, revise this clause by replacing it with any applicable controller to processor standard clauses or similar terms forming part of an applicable certification scheme (which shall apply when incorporated by attachment to this Contract).
- 1.14 The Parties agree to take account of any guidance issued by the Information Commissioner's Office. The Controller may on not less than 30 Working Days' notice to the Processor amend this Contract to ensure that it complies with any guidance issued by the Information Commissioner's Office.
- 1.15 Where the Parties include two or more Joint Controllers as identified in Annex 1 in accordance with GDPR Article 26, those Parties shall enter into a Joint Controller Agreement based on the terms outlined in Annex 2 in replacement of Clauses 1.1-1.14 for the Personal Data under Joint Control.

Annex 1 - Schedule of Processing, Personal Data and Data Subjects Processing, Personal Data and Data Subjects

This Schedule shall be completed by the Controller, who may take account of the view of the Processor, however the final decision as to the content of this Schedule shall be with the Controller at its absolute discretion.

1. The contact details of the Controller's Data Protection Officer are:

Data Protection Officer

[REDACTED]

2. The contact details of the Processor's Data Protection Officer are:

[REDACTED]

3. The Processor shall comply with any further written instructions with respect to processing by the Controller.

4. Any such further instructions shall be incorporated into this Annex 1.

Description	Details
-------------	---------

Identity of the Controller and Processor	The Parties acknowledge that for the purposes of the Data Protection Legislation, the Agency is the Controller and the Contractor is the Processor in accordance with Clause 1.1.
Subject matter of the processing	Some personal data associated with abstraction licenses and discharge consents where held by an individual rather than a company.
Duration of the processing	Processing will be carried out for the duration of the contract.
Nature and purposes of the processing	
Type of Personal Data being Processed	
Categories of Data Subject	Hydrometric, climate, geology, abstractions, discharges
Plan for return and destruction of the data once the processing is complete UNLESS requirement under union or member state law to preserve that type of data	<p>Processor is to produce a redacted version of the final report with any personal data removed.</p> <p>Any personal data collected through this Contract will be destroyed six months after completion of the project.</p>

