Application by Highways England for an Order Granting Development Consent for the A303 Amesbury to Berwick Down

The Examining Authority's Second Written Questions and requests for information (ExQ2) Published 5 July 2019

Environment Agency response to ExQ2 questions

ExQ2	Question to:	Question	EA response 26 July 2019
Ag.2	Agriculture		
Ag.2.1	Applicant Environment Agency	Groundwater abstractions/ private water supplies i. Please provide a response to the representation made by Fowler Fortescue on behalf of the Turner family in respect of the abstraction licence and the locations of the wells and boreholes [REP4-057].	i. The Groundwater Risk Assessment (ES Appx 11.4, July 2018) recognised four abstraction points (Well Points 1 – 4) related to the lapsed licence that was in the process of being re-applied for during preparation of the Environmental Statement. Well Point 5 was not on the lapsed licence but added when re-issued in June 2018 hence it was not included in data sent to the applicant by the EA prior to this date as the understanding was that the licence would be re-applied for under the same terms as the lapsed licence.
		ii. What implications does the new licence to abstract water have in respect of the development and assessments carried out? iii. What, if any additional monitoring or mitigation would be required?	The numerical modelling carried out to date and reported in ES Appendix 11.4 Annex 1 Numerical Model Report (July 2018) has assessed impacts on groundwater levels due to the presence of the proposed tunnel (and assuming no de-watering during construction) at Well Points 1-4 and these are deemed to be negligible with respect to seasonal fluctuations (maximum impact of 8cm rise at the nearest well to the tunnel (Well Point 1) under high groundwater level conditions. No fall in level was predicted at any of the Well Points 1-4 as a result of the tunnel under any situation.
			The model predicts no change in groundwater level under any situation at Well Point 4 which is the nearest to Well Point 5 and slightly closer to the tunnel. It is therefore not anticipated that specific assessment of groundwater level changes at Well Point 5 would identify any impact due to the proposed tunnel.
			In summary, whilst Well Point 5 has not been specifically assessed, we consider that assessment of impacts at Well Point 4 provides a conservative assessment of impacts at Well Point 5 since it is closer to the proposed scheme.
			The impact of construction and operation of the tunnel on surface and groundwater interests, including the above abstractions should be re-assessed if there are any changes to the design or construction methodology put forward by

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			the contractor. The EA should be consulted on this and agreement sought to ensure any impacts are suitably mitigated.
			From a water quality perspective, Well Point 5 is the most southerly of the Manor Farm abstraction points, situated immediately to the south of the existing A303. Since the new road will bypass Winterbourne Stoke to the north, Well Point 5 will be further from the works than Well Point 4 which was identified in the Groundwater Risk Assessment although no assessment of impacts on specific receptors was reported.
			We understand that detailed design of the drainage scheme is ongoing and approval will be secured by Requirement 10 of the DCO following consultation with the Environment Agency. We will expect the proposal to demonstrate that water quality will not be adversely impacted at existing abstraction points, including those operated by the Turner family as well as the wider aquifer.
			ii. Despite the omission of Well Point 5 in the Groundwater Risk Assessment, it is further from the proposed scheme than other points on the licence which were identified and assessed for impacts on groundwater level due to the proposed tunnel.
			We consider further assessment of risk to groundwater quality from discharges of road drainage across the whole scheme are required once the detailed drainage strategy is finalised and this should consider all existing water rights, including the points identified on the Turner family licence.
			iii. All abstraction points on the active Turner family abstraction licence should be included as potential receptors in the Groundwater Management Plan (as required by the OEMP) and the requirement for ongoing monitoring and/or mitigation identified by the plan once the final scheme design and construction methods have been confirmed.
De.2	Design		
De.2.1	Applicant All Interested Parties	OEMP, Chapter 4: Detailed Design [REP4-020] Chapter 4 of the OEMP is headed 'Development of detailed design in the WHS'. However, para 4.4.4 deals with matters outside of the WHS, quite rightly in the ExA's	The EA have no comments to make on signing and lighting. However, we consider this chapter title should be widened if it is to include activities outside of the WHS. In addition, if the purpose of the Stakeholder Consultation Group (SCG) includes being consulted on the detailed design of the scheme, then we consider the EA should be included in the list of stakeholders who form the SCG.

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LAGE	question to.	view, since the detailed design aspects should be matters of concern and consistency throughout the whole Scheme. Therefore, should the title of the chapter be amended, and its scope widened?	LA response 20 day 2013
De.2.4	Applicant All Interested Parties	OEMP, Chapter 4: Detailed Design [REP4-020] Para 4.4.4: Should consultation also take place on: i. River Till viaduct? ii. Countess flyover? iii. Green Bridges?	As we believe the River Till viaduct would be outside of the WHS, then yes this this should be included, along with any other relevant activities outside of the WHS. Consultation with the EA in terms of flood risk needs to occur with any part of the development which is within 8 metres of a main river and/or within the flood plain. As our flood risk permitting is included within this DCO, we will certainly need to be consulted on the River Till crossing (both temporary and permanent).
DCO.2	Draft Development Co	nsent Order (dDCO)	
Part 2 – V	Norks provisions		
Principal	powers		
DCO.2. 15	Environment Agency	Article 7 – Limits of deviation In the light of the Applicant's DL4 written summary of oral submissions put at the DCO hearing on 4 June 2019 [REP4-029], are there any outstanding concerns as regards the interaction between the vertical LoD of the proposed tunnel and groundwater flows?	We maintain our position that any deviation from the specific vertical alignment used to represent the tunnel in the numerical groundwater model (Fig. 3.9 of Environmental Statement Appendix 11.4 Annex 1: Numerical Model Report (AMW, July 2019)) or design or construction methodology proposed will require this modelling to be repeated to ensure it will not lead to greater impacts. This is because the representation of the tunnel in the model was based on the specific groundwater levels and tunnel elevations as shown in the figure. As suggested by the Applicant in their written summary of oral submissions put at the DCO hearing on 4 June 2019 [REP4-029], we agree that assessment of the final detailed design, including any further numerical modelling as referred to above should be included in the Groundwater Management Plan as required by MW-WAT10 of the OEMP.
Supplemental powers			
DCO.2. 20	Environment Agency	Article 13 – Discharge of water	The latest draft DCO dated June 2019 has not incorporated our recommended amendments to Article 13. We therefore wish to repeat our recommendation

ExQ2	Question to:	Question Please set out any proposed amendments to Article 13 in relation to groundwater together with the reasons for seeking these changes.	provided in our previous representations and at the groundwater hearing which state: We recommend that this article be amended to include groundwater and dissolved pollutants in the text. This is required because groundwater is a sensitive resource in the vicinity of the A303 Amesbury to Berwick Down site and requires particular protection. Here is our recommended amended wording: "Discharge of water (5) The undertaker must take such steps as are reasonably practicable to secure that any water discharged into a watercourse or public sewer or drain or to the ground under this article is as free as may be practicable from gravel, soil or other solid substance, oil or matter in suspension or dissolved pollutants."
			This amendment is in line with the draft DCO recently discussed at the A303 Sparkford to Ilchester DCO Examination in Somerset. Please see Part 4 (Supplemental Powers) Article 20 Discharge of water of the A303 Sparkford to Ilchester DCO.
Schedule	e 2 – Part 1 – Requireme	nts	
DCO.2. 34	Environment Agency	Requirement 3 (1) and (2) – Preparation of detailed design etc The Applicant's DL4 written summary of oral submissions put at the DCO hearing on the 4 June 2019 [REP4-029] and the post hearing note in relation to Requirement 3 indicates that it does not consider it appropriate for the Environment Agency to be consulted by the Secretary of State when he or she is considering whether to approve a departure from the plans specified in the Requirement. i. Please indicate whether there are any particular circumstances in relation to this scheme that would support the need for consultation. ii. Please comment on whether the fact that the scheme would still be subject to	We do not consider that the Secretary of State is suitably qualified to determine whether any deviations from the plan will lead to materially new or materially adverse impacts on the environment. We consider that such assessment falls within the expertise and remit of the Environment Agency and would request that we are consulted in the same way that Requirement 3 specifies consultation with the planning authority (Wiltshire Council) on matters related to its functions. Due to the highly sensitive nature of groundwater and surface water resources in the vicinity of the scheme from both quantity and quality perspectives we should be consulted on any changes to the proposed design of the scheme and if any construction dewatering is deemed to be required since the assumption to date has been that no dewatering will take place. We consider that the Environment Agency should be consulted by the Secretary of State when he or she is considering whether to approve a departure from the plans. This is because the project crosses two river corridors (River Avon and River Till) which are SAC's and because ground water is a very sensitive resource in the area and requires particular protection. As such we would recommend that the Environment Agency must be consulted on any departure from the plans and

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	quoonon to.	Requirement 4 which secures compliance with the OEMP [REP4-020] would provide sufficient safeguards and obviate the need for consultation with the Environment Agency to be included within Requirement 3?	no development should take place until the Environment Agency has confirmed that all apparent environmental risks associated with the departure from the plans have been considered and mitigated. The Environment Agency does not consider that Requirement 4 is sufficient to allay concerns of not being consulted under Requirement 3 above.
DCO.2. 43	Wiltshire Council National Trust Historic England English Heritage Environment Agency	Requirement 4 – Outline Environmental Management Plan The Applicant's DL4 written summary of oral submissions put at the DCO hearing on the 4 June 2019 [REP4-029], refers to the amended OEMP submitted at DL3 and the provision for consultation contained therein [REP3-006]. Do the parties have any outstanding concerns in this respect and would the provision for consultation be satisfactorily secured by the dDCO Requirement 4?	We note that dDCO Requirement 4 requires adherence with the OEMP. The requirement itself does not mention consultation, however the OEMP does. OEMP submitted at DL3 has since been updated and re-submitted at DL4. We are satisfied that the OEMP (submitted at DL4) includes consultation with the Environment Agency on preparation of CEMPs (PW-G1, MW-G5), revision of the CEMPs (MW-G6), preparation of management plans including Groundwater Management Plan and Water Management Plan (MW-G7) and preparation of the Handover Environmental Management Plan (MW-G11). However we consider the OEMP and dDCO Requirement 4 should state that the applicant should "consult with Environment Agency to ensure all environmental risks have been adequately assessed and that suitable mitigation measures are proposed and implemented to offset any impacts predicted". For all but the HEMP (MW-G11), the OEMP requires the contractor to submit a summary report of the consultation to the Authority including reasons should consultee's comments not be reflected in the submission. We request that this clause also be added to MW-G11 to ensure that any disagreement between the contractor and consultees is highlighted to the Authority before they determine any approval.
DCO.2. 57	Environment Agency Wiltshire Council	Requirement 7 – Contaminated land Please comment on whether any further drafting changes are necessary for this Requirement and/ or any additional Requirements are necessary in relation to contaminated land?	The amended Requirement 7 in the draft DCO submitted at DL4 is satisfactory for dealing with previously unidentified contamination that may be found during construction. However, there still does not appear to be any requirement for the applicant or their contractors to assess and if necessary remediate potential contamination that was identified in the Environmental Statement. We consider therefore that a more proactive approach should be taken to the management of contamination where it may be reasonably expected and it is not sufficient to wait until it is uncovered during construction before action is taken to assess and remediate it. This will help to ensure that any land contamination is appropriately managed and help to

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			reduce the risk of land contamination identified during construction delaying construction works.
DCO.2. 64	Wiltshire Council National Trust Historic England English Heritage Environment Agency	Requirement 11 - Details of consultation Are there any outstanding concerns as regards the provision for consultation with relevant stakeholders and the means whereby this would be secured by the dDCO?	We are satisfied that this Requirement will ensure our views are communicated to the Authority prior to it making decisions on discharge of Requirements. However as detailed above, we consider the OEMP and dDCO Requirement 4 should state that the applicant should "consult with Environment Agency to ensure all environmental risks have been adequately assessed and that suitable mitigation measures are proposed to be put in place to offset any impacts predicted."
DCO.2. 68	Environment Agency	Additional Requirements Please indicate and explain further, with reference to relevant local and national policies on this topic, the contributions to improvements to waterbodies that could potentially be achieved as a result of the scheme and why it would be reasonable and necessary to secure this within the dDCO.	As discussed in our previous written representations, we would recommend that a Requirement be included in the draft DCO relating to the need for an Environmental Enhancement Plan to be produced and submitted by the applicant. Alternatively we would be satisfied for the production of the plan to be included in the OEMP or HEMP. This could be included in the list of plans in OEMP reference MW-G7 and then the implementation/maintenance aspects covered in the HEMP as required. In terms of the contributions to improvements to waterbodies that could potentially be achieved as a result of the scheme, we can provide some specific examples, which are discussed below. These waterbodies have been impacted by previous road constructions and would benefit from being improved through the latest A303 Stonehenge road scheme. The Countess Channel and Bowles Hatches example provided below was submitted for the Environment Designation funding bid for 2019/20 but has currently been deferred. We understand the applicant may be relying on the Environment Designated Funds to address our concerns that the A303 Stonehenge scheme is lacking in environmental enhancement relating to the water environment. However, to date we do not have agreement for any proposals in the River Avon or River Till catchments relating to the Highways England Environment Designated funds. We therefore seek more certainty in delivering environmental enhancements that are required in these catchments, which we believe could be achieved in the production and implementation of an Environmental Enhancement Plan as part of the dDCO. Countess Channel and Bowles Hatches are located on the River Avon on the
			northern edge of Amesbury, very close to the proposed A303 Stonehenge road scheme. Please see the attached map (Map 1). These reaches of the Upper

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			Avon are part of the River Avon Restoration Plan. The reaches are part of SSSI
			unit 4 which is in unfavourable condition for inappropriate water levels,
			inappropriate modification of the channel form, physical processes and siltation.
			The river has been modified repeatedly through history and now has a rather
			complex layout. The key structures here are a weir which feeds flow toward the
			Countess channel, Bowles Hatches, three modern road bridges and one historic
			(disused) road bridge. The historic alignment of the River Avon can be inferred
			from examining LiDAR topographic data in conjunction with historic mapping dating back to 1879. It appears that a "double dog leg" bend upstream was
			removed when the A303 was built, in the 1960s. This presumably allowed the
			bridge to be built in the dry, on slightly higher ground, and the river was then
			diverted to flow under the bridge in a new excavation.
			The original channel remained downstream of the bridge and its upper end now
			forms the highway toe drain. Fish passage is currently impeded by Bowles
			hatches and the Countess weir.
			The primary restoration objectives for this reach are to remove the restriction to
			fish passage caused by the weir and the hatches and to improve the physical
			condition and habitat of the river channels. This will help towards improving the
			target condition, which is currently 'unfavourable', of the SSSI/SAC.
			The preferred option for this reach is to regrade the channel around the weir and
			reinstate the majority of the flow in the Countess channel, while leaving enough
			flow along the hatches feeder to maintain a healthy watercourse. This will create a more sustainable river system by reinstating a naturally functioning river channel
			which would adapt naturally to flood flows. This would improve drainage and
			preventing silt build up behind structures and within drainage channels, which
			potentially could impact the road network.
			This project will help natural sediment transport along the river whilst also
			benefiting the designated species and habitats currently not present along this
			reach of the River Avon.
			In 2014 the Environment Agency undertook appraisal, consultation (with
			landowners and fishing clubs) and drew up outline designs for this work; however,
			this project has not been progressed due to the complexity of the site and resources pressures within the programme. There is currently no secured funding
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	quodion ter	quodion	for this work but our delivery partners are keen to progress this project if resources are available to do so. Highways England will be a key partner in this project due to the close vicinity of the A303 and their road drainage networks. This project was submitted for the Environment Designation funding bid for 2019/20 but has currently been deferred.
			The Countess Channel and Bowles Hatches proposals, as well as others in the River Avon and River Till catchments that are currently less worked up, would contribute to restoration of the rivers Avon and Till (both SAC and in unfavourable condition) which the A303 currently crosses and additional crossing proposed. We can provide more detail on the river restoration proposals if required.
			There is no commitment within the current A303 Stonehenge road scheme to directly enhance the area nor take advantage of existing partnership opportunities that may contribute to overall net gain and achieve multiple benefits.
			Multiple benefits could be achieved by contributing to climate change resilience, potential air quality/noise benefits from any increased (wet) woodland, wellbeing and recreational benefits from angling and other public opportunities, not least alongside species and habitat improvements from improved morphology.
			This would commit Highways England to explore and utilise the opportunities within the Hampshire Avon Catchment Partnership to deliver the River Avon Restoration Plan and its associated multiple benefits.
			Local and National policies There are government aspirations for river restoration, net gain, partnership working and multiple benefits. These include: Making Space for Nature, Biodiversity 2020: A Green Future: 25 Year Environment Plan; National Planning Policy Framework (NPPF); SW River Basin Management Plan; and the River Avon Salmon Action Plan.
			In particular we would reference the recent Biodiversity Net Gain good practice guidance as published by CIEEM and CIRIA (and 2019 government consultation), promoting: o Being inclusive, equitable, sharing benefits amongst stakeholders; Being additional to achieve conservation outcomes that demonstrably

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	Quodion to:	quodion	Optimise sustainability and the wider environmental benefits for a sustainable society and economy.
			On a more local level the River Avon Restoration Plan sets out the aims for the River Avon catchment.
			We consider it would be reasonable and necessary to secure this within the dDCO for the reasons outlined above. In particular to fulfil the aims of the River Avon Restoration Plan; to maximise the water environment opportunities in the vicinity of the A303 road scheme; and to ensure the scheme satisfies the requirements of national and local policy.
Fg.2	Flood risk, groundwat contamination	er protection, geology and land	
Fg.2.2	Applicant Environment Agency Wiltshire Council National Farmers' Union	Flood risk and drainage i. How would the discharge of any water from the construction phase, including any dewatering of the tunnel arisings slurry be controlled to prevent flood risk and contamination? ii. Should this be explicitly addressed in the OEMP?	Prevention of pollution i. Discharges to ground or surface water from the construction phase would be subject to the Environmental Permitting Regulations 2016 and may require an environmental permit. The Environment Agency should be contacted at the earliest opportunity and/or reference to the Environmental Permits pages of the GOV.uk website once the details of any discharges are known, to allow determination of whether a permit will be required. If a permit is issued it will be the responsibility of the applicant to ensure their discharge does not cause flooding or pollution. Any such requirement may be conditioned. ii. Since these discharges are covered by existing legislation we do not consider it necessary to address explicitly in the OEMP. Flood Risk The construction method at present does not appear to require any dewatering. It is essential that any changes to the detailed design are adequately risk assessed. The EA should be consulted on any updated design and risk assessment and agreement reached with the EA regarding conclusions and any mitigation measures proposed. No works should commence until written agreement that these plans provide appropriate measures and mitigation to protect the site and surrounding area from flood risk during construction and operation of the scheme.
Fg.2.3	Applicant Environment Agency Wiltshire Council	Flood risk and drainage i. Given the Council's statutory role should MW-WAT3 be expanded to also require	We agree Wiltshire Council should be consulted as well as the EA. We believe this should apply to the entirety of MW-WAT3.

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		consultation and/ or agreement with the Council as well as the Environment Agency?	
		ii. If so, should this just be in respect of part c or more generally?	
Fg.2.5	Applicant Environment Agency	Flood risk and drainage Please provide an update on the discussions in respect of the FRA. In particular please outline any areas of disagreement, where additional information is required, and any consequential implications for other documents such as updates to the OEMP?	Since Deadline 4, we have held some useful discussions with the applicant with regard to flood risk issues. We have agreed some amendments to the OEMP in MW-WAT12 and MW-WAT13, which we believe will be reflected in the next version. This addresses our concerns in relation to flood risk matters. Provided that our agreed amendments are incorporated into the OEMP we would have no flood risk matters in the Statement of Common Ground (SOCG) within disagreement or under discussion, as all our issues should be moved to areas within agreement in the next version of the SOCG, which we believe will be submitted at Deadline 7. We will be able to provide definite confirmation of our flood risk position, once we have reviewed the next version of the OEMP. At this stage we are happy with the hydrological fluvial modelling which has been completed.
Fg.2.6	Applicant Environment Agency Wiltshire Council	Flood risk and drainage i. Should the Flood Risk Management Plan be listed in MW-G7 of the OEMP and should the plan be developed in consultation with Wiltshire Council as well as the Environment Agency? ii. If not, why?	Yes we agree that the Flood Risk Management Plan should be listed in MW-G7 of the OEMP and that the plan should be developed in consultation with both Wiltshire Council and the Environment Agency.
Fg.2.8	Applicant Environment Agency Wiltshire Council	Flood risk and drainage i. Please provide an update on the discussions about the climate change allowance for road drainage.	Further discussions with the applicant with regards to the road drainage ponds has suggested they may be able to be removed from the 1%AEP plus appropriate allowance for climate change flood extent, which will remove the impact it has on the flood plain by displacing flood water.
		ii. If the Applicant considers that a 30% allowance (with a 40% sensitivity check) is sufficient please respond to the Council concerns in respect of reliance on the	As part of our strategic overview role we support Wiltshire Council with the upper allowance (40% for surface water) being applied to the road drainage design. This is due to the consequences of the testing of this allowance on the proposed design and the freeboard being used up. An alternative option for HE is to

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		freeboard, lack of allowance for any uncertainty and that climate change allowances may increase in the near future?	demonstrate that no increase in flood risk is caused by not designing the road drainage to the 40% allowance.
		iii. Could the Environment Agency set out its position on this matter?	UKCP18 projections relating to peak rainfall intensity and peak river flow are due to be released in 2019. This may result in the allowances for surface water and rivers changing and requiring reflection within this application.
		iv. Should MW-WAT12 be updated to include reference to climate change allowances in line with the comments made by the Environment Agency at DL4 [REP4-049]?	With regard to MW-WAT12 of the OEMP, we have agreed some wording that addresses our comments made in relation to climate change allowances. We believe this wording is to be included in the next version of the OEMP.
Fg.2.13	Applicant Environment Agency Wiltshire Council	Flood risk and drainage Having regard to the provision of the additional evidence submitted to the examination, please set out an updated assessment of the proposed development in respect of the flood risk policy, including the application of the Sequential and Exception Tests, in the NPSNN?	Provided that the wording we have agreed with HE will be included in the next version of the OEMP (MW-WAT12 and MW-WAT13), then we would be satisfied that flood risk policy requirements have been achieved for the DCO application and for the current stage of this project.
Fg.2.14	Applicant Environment Agency Wiltshire Council	Drainage The road drainage strategy would involve water from a sump within the tunnel being pumped beyond the eastern portal. The water would then either enter the highway drainage system or, if contaminated, be retained in an impounding sump for disposal by tanker. It appears that the switch between discharge or retention could either be automated or manual. The method is not secured (ie within the OEMP). i. What are the risks and benefits of each approach?	We have previously requested that retention of contaminated runoff resulting from a pollution incident in the tunnel be controlled automatically to reduce the risk that time delays in manual operation of the necessary valves will allow contaminated water to be distributed to the wider drainage network and potentially released to the environment. Whilst there is a risk of failure of such an automated system, we would expect the design to incorporate appropriate backup measures and fail safes to guard against inadvertent release of contaminated runoff and manual operation of the system. We understand that detailed design of the drainage system is ongoing and therefore we do not have sufficient information to estimate how far contaminated water may be distributed through the wider system in the event of delays in operation of manual overrides following an incident.
		ii. If a manual approach were chosen, would any time delay from a contamination incident to the manual override being initiated result in	We request that an automated method of control is specified in the OEMP in order to reduce the risk of pollution of the sensitive water environment in the vicinity of the scheme should there be delays in physical attendance of emergency services following an incident in the tunnel.

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		polluted water entering the wider road drainage system?	
		iii. If an automated approach were chosen, what measures would be in place in the event that the automated system failed?	
		iv. In view of the importance of this part of the drainage strategy, is it necessary to provide certainty on this within the OEMP?	
Fg.2.15	Applicant Environment Agency Wiltshire Council	Drainage Given its significance should the impounding sump (and related infrastructure) be identified on the work plans and specified in the Works in Schedule 1 of the dDCO?	We are awaiting consultation on the detailed design of the drainage system for the scheme, in which we expect details of the impounding sump along with capacity of the wider system to contain and deal with contaminated runoff. Approval of the drainage strategy is secured by Requirement 10 of the DCO.
			Provided the overall scheme has sufficient ability to prevent discharge of contaminated runoff and pollution of the environment we do not consider it necessary to stipulate in the DCO that a specific impounding sump be used since other arrangements may provide equivalent levels of environmental protection.
Fg.2.17	Applicant Environment Agency Wiltshire Council	Flood risk and drainage At DL4 the Council suggested additions to MW-WAT14 [REP4-039].	We welcome that Requirement 10 requires the consultation and written agreement with the Environment Agency during detailed design of the drainage system.
		i. Given Requirement 10 would secure the details of the drainage system, why does the Council consider it necessary that this detail is set out in MW-WAT14? In responding, please provide a justification for each separate addition proposed.	Wiltshire Council's comments are related to ensuring the details of the drainage scheme conform to certain flood risk criteria. The only suggestion we have relating to groundwater and contaminated land issues is a request that "automated control of the tunnel drainage" is specified in MW-WAT14. As stated in FG.2.14 above, we would support the stipulation in the OEMP for automated tunnel drainage control.
		ii. Can the Applicant and the Environment Agency provide their views on whether the suggested additions are necessary?	Surface water needs to be managed appropriately to ensure flood risk is not caused or increased on or off the site. We would defer to the Lead Local Flood Authority on their reasons as to why the additions are required. A timetable for implementation is an important condition to ensure that mitigation is in place to ensure excess runoff is able to be mitigated for when it is produced.
Fg.2.18	Applicant Environment Agency Wiltshire Council	Flood risk and drainage Requirement 10 of the dDCO requires that the drainage system is approved by the	Due to the sensitivity of the water environment within the scheme - groundwater designated as principal aquifer with potable and agricultural use abstractions and SAC designated surface watercourses – it must be ensured that these resources

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		Secretary of State following consultation with the Council and the Environment Agency. Notwithstanding the recent addition of Requirement 11, should this be amended to secure the specific approval/ agreement of either or both the Environment Agency and the Council? Please provide detailed reasoning and, if you consider that this is necessary, why the current drafting of Requirements 10 and 11, along with the OEMP, are not adequate.	are protected. Protection of controlled waters falls within the Environment Agency's remit and we therefore consider it appropriate that we have meaningful influence over the standards of environmental protection incorporated into the scheme. Whilst we welcome the inclusion in Requirement 10 for consultation with the Environment Agency over the final detailed drainage design and the mechanism for our opinion to be conveyed to the Secretary of State in summary form secured by Requirement 11, we consider that a specific requirement for our agreement with the proposed scheme will ensure that the most appropriate body assesses the adequacy of environmental protection measures.
Fg.2.19	Applicant Environment Agency Wiltshire Council	Flood risk and drainage i. Could the Environment Agency and the Council set out what, if any concerns remain in respect of the updated Road Drainage Strategy [REP2-009 and REP2-010] and are requirements beyond those set out in DMRB necessary? ii. Could the Applicant set out its position on this matter and confirm whether a revised version is intended to be submitted?	REP2-009 – ES Appendix 11.3 – Road Drainage Strategy (May 2019) (Clean) REP2-010 – ES Appendix 11.3 – Road Drainage Strategy (May 2019) (Tracked) The Drainage Strategy submitted to date contains only a preliminary design and lacks details that we require to be satisfied that the risk of pollution from the scheme is acceptable. The details we require, and have previously requested, include the capacity of the system to contain reasonably expected volumes of contaminated runoff and the risk posed to groundwater quality in the aquifer generally and at abstractions by discharges from infiltration basins. We consider that the HEWRAT risk assessments presented to date at the application stage are suitable for high level risk screening, but more detailed assessments of the infiltration basins is required to demonstrate that the discharges will not pose a risk of pollution to the underlying aquifer or have adverse impact on existing abstractions. These assessments should follow targeted site investigation of the proposed basin locations and incorporate site derived values for parameters including infiltration rates and depth to groundwater. No justification has been provided to date that demonstrates that the requirements of HD45 will provide sufficient protection to controlled waters and that measures in excess of these, as allowed for by HD33/16 paragraph 2.1, are not required. With regard to flood risk issues, the only concern the EA have remaining is the location of the drainage ponds which are currently within the 1%AEP plus

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	quodion to:		appropriate allowance for Climate change flood extent which causes a displacement of fluvial flood water. However, we consider this can be addressed at the detailed stage, along with consultation between Wiltshire Council and Highways England. We would recommend any component built to ensure flood risk safety of the development for its lifetime to be maintained by the applicant.
Fg.2.20	Applicant Environment Agency Wiltshire Council	Flood risk and drainage Please provide an update on the discussions in respect of the maintenance responsibilities for the drainage infrastructure?	We consider this to be a Lead Local Flood Authority responsibility. Maintenance should therefore be agreed between Wiltshire Council and Highways England. We would recommend any component built to ensure flood risk safety of the development for its lifetime to be maintained by the applicant.
Fg.2.21	Applicant Environment Agency Wiltshire Council	Drainage, groundwater and contamination Reliance would be placed on natural attenuation of any contaminants that pass through the filtration material in the drainage treatment areas. Groundwater levels are relatively high in the area. i. What degree of confidence is there that this method is sufficient and how conservative is the design? ii. What water quality standards would be applied and how would meeting these be monitored?	We have not received any risk assessment to demonstrate the level of treatment provided by the proposed drainage treatment areas. We therefore do not have confidence at this stage that the proposed method of treatment will be sufficient for protecting groundwater quality. Any proprietary attenuation substance that may be installed will be limited in the chemicals that it can remove. This will typically be hydrocarbons. Any spill of other chemicals such as pesticides, herbicides etc are unlikely to be treated by such substances. This is the basis for the Environment Agency requesting the drainage design should allow for storage of chemical spill and run-off volume from rainfall event so that any such spill can be isolated before it is discharged/soaks away and where appropriate tankered away to an appropriate treatment works. The EA should therefore be consulted in the drainage design and agree that any mitigation and attenuation proposed will be sufficient to protect the water environment. Both Drinking Water Standards and Freshwater Environmental Quality Standards are appropriate in this scheme since groundwater supplies both potable abstractions and baseflow to the Rivers Till and Avon.
Fg.2.22	Applicant Environment Agency Wiltshire Council	Groundwater monitoring Groundwater monitoring (for water levels and quality) is intended to take place during construction and for 5 years post construction. i. For the construction phase this is dealt with in MW-WAT10 of the OEMP. Is it intended that the post construction monitoring is secured via the HEMP? Is this sufficiently	The requirement for post construction monitoring is to allow any observable impacts from the scheme to be detected and if necessary, mitigation measures implemented. For this to be effective, monitoring should cover periods of high and low groundwater level and specification of a fixed duration may not achieve this. We consider that the detailed requirements for monitoring be set out in the Groundwater Management Plan (MW-WAT10) and carried forward into the HEMP following completion of construction works.

ExQ2	Question to:	clear to ensure that adequate post construction monitoring is secured, or should the 5-year period be explicitly stated? ii. In addition to the Environment Agency, should Wiltshire Council also be consulted on the Groundwater Management Plan? It appears that the principle of on-going monitoring has been agreed between the Applicant, the Environment Agency and Wiltshire Council, but that specific proposals have not yet been agreed. iii. To what extent would it be necessary to agree specific details at the pre-consent stage? If this is required, how would this be secured? Are the existing measures in the dDCO, the OEMP and the requirement for the production of a HEMP sufficient to ensure that the detailed proposals would be secured/agreed appropriately? iv. What processes would be put in place in respect of landowner consent for the ongoing monitoring?	Wiltshire Council have responsibility for groundwater flooding and should therefore be consulted and provide agreement on the Groundwater Management Plan in addition to the Environment Agency. The details of monitoring will depend in part on the final scheme design and construction methods. It is therefore likely that any scheme detailed now would be subject to amendment following granting of the DCO. We consider that MW-WAT10 of the OEMP secures the requirement for the Groundwater Management Plan to include a groundwater level and water quality monitoring and reporting programme. This plan should be updated and amended as necessary prior to incorporation into the HEMP on completion of construction works to ensure the necessary ongoing monitoring is secured. Groundwater monitoring is in the interest of landowners in the area owing to the reliance on groundwater supplies.
Fg.2.23	Environment Agency	Groundwater i. Can you confirm whether you are satisfied with the provision in the OEMP for the Groundwater Management Plan? ii. If this is inadequate, please specify why and what amendments do you consider to be	We consider the Groundwater Management Plan, as required by MW-G7 and detailed in MW-WAT10, is a fundamental mechanism to provide a level of assurance that the scheme will not adversely affect the sensitive groundwater environment. We are satisfied with the proposed details of the plan from the outline provided in MW-WAT10
Fg.2.26	Applicant Environment Agency	necessary? Groundwater, Geology and detailed design	Yes, we consider that there should be a requirement to consult the Environment Agency should there be any change to the proposed design of the tunnel from the specific design assessed in the Groundwater Risk Assessment. This is because a

ExQ2	Question to:	Question	EA response 26 July 2019
		In its DL4 submission the Environment Agency has requested that it be consulted on any updated design to the proposed tunnel to consider any impact on groundwater flows [REP4-049]. Requirement 3 in the dDCO requires consultation with the planning authority on matters relating to its functions. i. Should there be a Requirement to consult the Environment Agency where any changes are proposed to the tunnel? Please provide reasons. ii. If consultation is required, how should this be secured (for example by amending Requirement 3)?	change to the design could lead to greater impedance of groundwater flow and corresponding increase of groundwater levels to the north and fall to the south of the tunnel. Depending on the magnitude of these level changes significant impacts to abstractions and/or baseflow to rivers could result. We consider that evaluation of any assessment of such impacts falls within the remit of the Environment Agency. Requirement 3 specifies consultation with Wiltshire Council (the planning authority) on matters within their remit and we would expect similar consultation on matters within the Environment Agency's remit by additional wording in Requirement 3. We would also recommend that the applicant should seek agreement that the environmental risks associated with the scheme have been adequately risk assessed and suitable mitigation proposed.
Fg.2.28	Applicant Environment Agency Wiltshire Council	Contamination Requirement 7 deals with contamination found during construction. i. Is it necessary to also secure precommencement investigation and risk assessment of potentially contaminated land to minimise the risk of contamination being discovered during construction? Please provide reasons for your answer. ii. If this is necessary how should this be secured (ie an additional Requirement)? iii. It appears that some investigation is ongoing, can the Applicant provide an update on this and whether it is likely to be completed and be able to be reviewed adequately during the examination?	We have previously requested inclusion of a pre-commencement requirement in the DCO to undertake investigation and risk assessment of potentially contaminated land along the route alignment, particularly the former military sites. Potential contamination was identified in the desk study reported in the Environmental Statement and we consider that where contamination may reasonably be expected to exist, risks should be investigated prior to works commencing rather than relying on a less controlled discovery and greater potential for mobilising contamination if found during the main construction works. We request that an additional Requirement is included in the DCO to secure assessment and if necessary, remediation of contamination.
Fg.2.29	Applicant Environment Agency Wiltshire Council	Contamination i. Should Requirement 7 be updated to clarify that, if contaminated land and/ or	Whether it would be necessary to cease all works in an area if contaminated land is found would depend on the nature of works being carried out, nature and extent of any contamination identified and remediation approach that may be proposed. It

ExQ2	Question to:	Question	EA response 26 July 2019
LXQZ	Question to.	groundwater is found works in that area should cease until the risk assessment is completed and (if necessary) the remediation is approved? ii. If not, why?	may be possible for certain types of non-intrusive works to continue whilst the investigation and assessment is carried out without increasing the risks of mobilisation of the contamination. In the interests of expediency for the contractor we do not consider that a blanket approach requiring all works to cease in every case is appropriate. We would expect the CEMP to identify the process that will be followed in reporting, investigating and remediating any contamination. This will include detailing circumstances when works should cease.
Fg.2.30	Applicant Environment Agency Wiltshire Council	Contamination i. Should MW-WAT2 and MW-WAT7 in the OEMP also require consultation with Wiltshire Council in respect of the Water Management Plan? ii. If not, why?	Owing to their responsibility for ordinary watercourses and flooding from local sources we consider it appropriate for Wiltshire Council to be consulted on the Water Management Plan in addition to the Environment Agency.
Fg.2.31	Applicant Environment Agency Wiltshire Council	Contamination Should MW-GEO1 in the OEMP be amended to also consider human health and environmental impacts of the scheme and contamination [REP4-020]?	At present MW-GEO1 requires consideration of risks to human health from disturbance of contaminated land. We agree that this should be extended to also consider risks to the environment, specifically controlled waters, from disturbance of contaminated land.
Fg.2.32	Applicant Environment Agency Wiltshire Council The Stonehenge Alliance	Contamination and groundwater flow In respect of the tunnel boring methodology and the potential for there to be a risk of pollution or impediment to groundwater flow the Environment Agency notes that OEMP: PW-G1, MW-G5, MW-G7, MW-WAT8, MW- WAT9, MW-WAT 10, MW WAT11, and MW- WAT14 provide some control of these activities (emphasis added) [REP4-020]. Are the controls adequate and, if not, what additional controls are required to mitigate any risks appropriately?	We consider that existing controls are adequate for managing the risks from construction at this stage of the scheme. However, we will expect detailed assessment of the effects of the construction method chosen following detailed design including the degree of invasion of drilling fluids and grouts, risk to groundwater quality from these and the long term impact on groundwater levels and flows caused by additional impedance beyond the designed cross-section of the tunnel. We expect this assessment to be delivered within the Groundwater Management Plan (MW-WAT10) and as part of the approval process for ground treatments (MW-WAT9).
Fg.2.33	Applicant Environment Agency Wiltshire Council	Dewatering The OEMP now commits to the use of closed face tunnelling techniques. This should	We do not consider that there has been any assessment of dewatering in relation to this scheme to date.

ExQ2	Question to:	Question	EA response 26 July 2019
		prevent the risk of large-scale dewatering being required [REP4-020].	The impacts of dewatering would depend on many factors including the location of abstraction and discharge and whether other control measures are implemented.
		i. To what extent was small-scale dewatering assessed in the Environmental Statement	The severity of impact would therefore vary if a certain rate of dewatering was implemented at different locations.
		and does it reflect the worst-case scenario in terms of dewatering?	We therefore do not consider it appropriate to attempt to set a maximum rate of dewatering. Rather, the impacts of any proposed dewatering should be assessed by the contractor based on the specific details of the operation.
		ii. Should a limit on the level of smaller-scale	
		dewatering be secured as part of the DCO to ensure that dewatering, beyond that assessed, does not take place?	As detailed above, any change in design or construction method should be further risk assessed and the Environment Agency consulted to ensure the risk to the environment has been suitably assessed and agreement should be sought that any mitigation is sufficient to offset any impacts on the water environment.
		iii. Is the approval/ permitting procedure	Library Haw Water Day and A 4004 at East and State of Francisco
		sufficient to ensure any required dewatering is adequately controlled?	Under the Water Resources Act 1991, a licence is required from the Environment Agency if dewatering is proposed at rates greater than 20 m³/day. We will expect any application to be accompanied by a detailed assessment of impacts. Early dialogue with the Environment Agency over any proposed dewatering is advised to reduce the potential for delays.
			It should be noted that the Environment Agency will not grant a licence for dewatering or any other abstraction if it cannot be demonstrated that the impacts
			are acceptable. By the applicant requiring EA approval for any risk assessment and mitigation through planning we should not get into a situation where planning is approved but the applicant cannot obtain a permit to undertake such activities.
Fg.2.34	Environment Agency	Dewatering	There has so far been no assessment of dewatering relating to this scheme.
	Wiltshire Council	Are there any residual concerns in respect of potential dewatering and to what extent would the permitting regime deal with these?	Should dewatering be required, the licensing regime will ensure that dewatering is only allowed where it has been demonstrated by the applicant or their contractor that the impacts of the proposed operation are acceptable. In this case, we would expect the evidence for this to be provided within the Groundwater Management Plan and CEMPs prior to any licence application.
Fg.2.36	Applicant Environment Agency	Disapplication of legislation and protective provisions i. Please provide an update on discussions in respect of the disapplication of legislation and the related Protective Provisions?	Discussions with the Applicant's solicitors have concluded with agreement on the protective provisions. The Protective Provisions contained within the latest published version of the DCO are consistent with the agreement reached.

ExQ2	Question to:	Question	EA response 26 July 2019
		ii. Please clarify whether the current	
		proposed wording now satisfies all the	
		relevant comments raised in [RR-2060]?	
Fg.2.37	Applicant	Soils management strategy	The Environment Agency should be consulted on Soil Management Plan to
1 9.2.37	Environment Agency	In MW-G7 the OEMP states that the main	consider the wider environmental impact of soil management on water resources
	Wiltshire Council	works contractor will consult with Wiltshire	and water quality. Land contamination issues may however be considered through
		Council, the Environment Agency (and	CL:AIRE Definition of Waste Code of Practice and as such the relevant Qualified
		others) on those aspects of the various	Person, appointed by the contractor will make a declaration on the suitability of the
		specified plans relevant to their functions	Materials Management Plan from the perspective of contamination.
		[REP4-020].	
		In respect of the Soils Management Strategy	Since soils will largely be re-used for agricultural production, we would
		it appears to be unclear who would be	recommend that an appropriate body should also be consulted on the proposals to
		consulted.	ensure suitability of any restoration of agricultural land – such as Natural England
		Please provide clarity on this, for example would this include Wiltshire Council. Should	Catchment Sensitive Farming, the NFU or landowner(s).
		this be more clearly stated in the OEMP?	
		this be more clearly stated in the OLIMF!	
Fg.2.42	Applicant	Blick Mead hydrogeology	We would recommend that Historic England are also consulted on any monitoring
] " 9	Environment Agency	Notwithstanding the Applicant's position that	data pertaining to archaeological sites including Blick Mead.
	Historic England	future monitoring of groundwater at the Blick	
		Mead site is not required, it is suggested that	Where any monitoring data or assessment indicates any impact at Blick Mead or
		the site could/ would be monitored more	other archaeological site dependent on saturation, we recommend that Historic
		generally and more widely (with reference to	England are consulted and their guidance sought.
		MW-WAT10). The Groundwater	
		Management Plan is proposed to be	
		prepared in consultation with the	
		Environment Agency only who have no heritage responsibility. In the event that	
		groundwater levels are affected at the Blick	
		Mead site it is unclear how any reporting and	
		subsequent remediation would be adequately	
		secured without any requirement to take	
		account of the heritage assets at the site.	
		In this context, how would any general	
		monitoring adequately take account of the	
		effect on archaeological remains?	
Fg.2.44	Applicant	Blick Mead hydrogeology	No comment.

ExQ2	Question to:	Question	EA response 26 July 2019
	Environment Agency Historic England Wiltshire Council Mark Bush on behalf of the Blick Mead Project Team The Council for British Archaeology	The extent of the archaeological remains at the Blick Mead site is unknown. To what extent should this influence any monitoring at the site both in terms of establishing the baseline and then ongoing monitoring?	LA response 20 outy 2019
Fg.2.46	Applicant Environment Agency Historic England Wiltshire Council	Blick Mead hydrogeology In the Environment Agency's response to DL4 it was advised that any dewatering in the vicinity of the Blick Mead site has the potential to impact on groundwater levels but that this would be subject to regulation by the Environment Agency [REP4-049]. It appears that an assessment of risk to all receptors would be required prior to the issue of any licence. Would any assessment of risk extend to the effect on archaeological remains and is there sufficient expertise in the process to scrutinise any heritage impacts prior to issuing any licence?	When assessing applications for abstraction, including dewatering, as part of our conservation duties we, the Environment Agency are required to have regard for sites or objects of archaeological interest and take into account any effect on such sites or objects in our decision making. Should any assessment of an application for dewatering identify potential impacts at Blick Mead we would consult with Historic England for advice before granting any licence as part of the usual licensing process.
Fg.2.47	Applicant Environment Agency Historic England Wiltshire Council	Blick Mead hydrogeology In the Environment Agency's response to DL4 it was noted that there is potential for the final design to deviate from that assessed to date and, if this were to occur, then further assessment of risk in respect of the magnitude and extend of impacts on groundwater would be required [REP4-049]. If this were to occur what measures would there be to ensure that any further risk assessment would take account of the potential to impact on the archaeology at the Blick Mead site?	If any further risk assessment identifies potential impacts at Blick Mead, we would expect that Historic England are consulted to provide expert advice on the significance of the impacts in relation to the objects of archaeological interest.
Fg.2.48	Applicant Environment Agency Historic England	Blick Mead hydrogeology	The groundwater risk assessment completed to date suggests that there is unlikely to be any significant fall in groundwater level in the chalk aquifer beneath the Blick Mead site as a result of the proposed tunnel. There is the possibility that

ExQ2	Question to: Wiltshire Council	Please provide a detailed response to the submissions made by Mark Bush on behalf of the Blick Mead Project Team [REP4-047]. Please have particular regard to the tiered assessment and whether it would be necessary for this to be advanced ie to tier 4?	the deposits receive a certain degree of wetting from superficial deposits above in addition to water from the chalk below and this recharge is unlikely to be affected by the proposed tunnel. Should the tunnel design or proposed method of construction change to such a degree as to lead to impacts in chalk groundwater level at Blick Mead, any contribution from the superficial deposits above would continue. If subsequent risk assessment suggests impacts on groundwater level in the chalk are likely to extend to the site then further investigation of the relevant importance of wetting from the chalk or superficial deposits would allow better assessment of overall magnitude of impacts on wetting of the deposits of interest. Preservation of archaeological remains is the remit of Historic England who are the authors of guidance on carrying out the Tiered Assessment. We therefore defer to their judgement on the adequacy of the assessment completed to date.
Ns.2	Noise and vibration		
Ns.2.4	Applicant Environment Agency Wiltshire Council	Piling i. Has the terminology for non-impact piling now been agreed? ii. Has this been consistently set out through the documentation to ensure consistency at the River Till, Countess roundabout or other areas within the site where piling may occur?	 i. Yes the terminology for non-impact piling has now been agreed. We understand this to be non-percussive piling. We are therefore satisfied with the wording in the latest version of the OEMP (June 2019). ii. We have not reviewed all of the application documents to confirm whether this is consistently used throughout. However, we would require that any piling in or near to watercourses should use the same principle of non-impact piling.
WM.2	Waste and materials m	anagement	
WM.2.1	Applicant Environment Agency Wiltshire Council	i. Should the Site Waste Management Plan and Materials Management Plan i. Should the Site Waste Management Plan and the Materials Management Plan be prepared in consultation with either Wiltshire Council and/ or the Environment Agency? Please provide reasons for your answer. ii. Both these plans are listed in MW-G7 where there is a general requirement to	We understand that re-use of soils will be conducted under CL:AIRE Definition of Waste Code of Practice and as such the relevant Qualified Person, appointed by the contractor will make a declaration on the suitability of the Materials Management Plan. Under the Code of Practice there is no requirement for the Materials Management Plan to be approved by the Environment Agency. Audits of the application of the Code of Practice are managed centrally by the Environment Agency. The EA will get involved if the applicant needs to apply for a waste permit. The documents will

ExQ2	Question to:	Question	EA response 26 July 2019
		consult with the relevant bodies in respect of the areas relevant to their functions. However, if required, should this consultation be explicitly set out (for example in MW_MAT1 and MW_MAT2 of the OEMP [REP4-020]) to provide clarity?	be submitted to the EA permitting team at that stage, at which point they will review whether the documents are adequate.