

Environment Agency Permitting Decisions

Bespoke permit for accumulation and disposal of radioactive waste

Executive Summary

1. As the leading organisation working to protect the environment, it is the Environment Agency's role to regulate discharges and waste disposals from non-nuclear premises in England and to ensure their impact on air, water and land is minimised.
2. Based on our recent experience, authorising the production of oil and gas is the area of regulation that has the highest profile and the greatest perceived uncertainties.
3. This decision document summarises our detailed assessment of an application to vary the existing radioactive substances standard rules permit to allow the site to receive aqueous radioactive waste in the form of water containing substances from the operation of the production of oil and gas. The water is permitted to contain radionuclides arising from the permitted NORM industrial activities and be re-injected into the strata from which oil has been extracted at Angus Energy Weald Basin No 3 Limited at the Brockham Oilfield, Feltons Farm, Old School Lane, Brockham, Betchworth RH3 7AU.

About this decision document

4. This document, which accompanies the permit, is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our decision.

Preliminary information

5. The number we have given the permit is EPR/RB3994DK. We refer to the permit as "the **Permit**" in this document.
6. We gave the application the reference number EPR/RB3994DK/V002. We refer to the application as "the **Application**" in this document.
7. The Applicant is Angus Energy Weald Basin No 3 Limited. We refer to Angus Energy Weald Basin No 3 Limited as "the **Applicant**" in this document. Where we are talking about what would happen after the Permit is granted, we call Angus Energy Weald Basin No 3 Limited "the **Operator**".
8. The site for the proposed radioactive substances activity (the accumulation and disposal of radioactive waste) is at Brockham Oilfield, Feltons Farm, Old School Lane, Brockham, Betchworth RH3 7AU ("the **premises**").

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9. The Application was duly made on 16 June 2022. This means we considered it was in the correct form and contained sufficient information for us to begin our determination.

Use of terms

Drilling muds

10. Are used to lubricate the wellbore while drilling.

Drill cuttings

11. Are broken bits of solid material naturally occurring underground and removed from a borehole as part of the drilling process into underground formations.

EPR

12. The Environmental Permitting (England & Wales) Regulations 2016 and the amendments made to radioactive substances regulation in the Environmental Permitting (England & Wales) (Amendment) Regulations 2018 are referred to together as "the EPRs". References to schedules or paragraphs in EPR are to the schedule or paragraph currently in force. Radioactive substances activities have to meet the requirements set out in Schedule 23 of the EPRs. The current version of Schedule 23 is contained in the 2018 Regulations. EPR permits for radioactive substance activities are referred to as RSR (radioactive substances regulation) permits.

Flowback fluids

13. Fluid contaminated with minerals and NORM returned to the surface during and following well stimulation

NORM

14. Is "naturally occurring radioactive material" derived from the radioactive decay of uranium and thorium naturally present in rocks since their formation. NORM will contain many different radioactive materials in differing amounts from the radioactive decay of uranium and thorium, with radium 226 (Ra226) and radium 228 (Ra228) typically the radioactive materials of most significance in produced waters. The amount of radioactivity is measured in Bequerels (Bq, kBq, MBq, GBq).

The production of oil and gas is a NORM industrial activity which requires a radioactive substances activity permit for the accumulation and disposal of radioactive waste.

Produced water

15. The water naturally present in some hydrocarbon-bearing strata that is brought up during the extraction of oil and gas.

Radiation dose

16. The total amount of radiation absorbed by human tissues is expressed in sieverts (Sv). The average annual dose from all sources of radiation in the UK (including from

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radon and medical procedures) is 2.6 millisieverts per year. For wildlife we use the absorbed dose measured in grays (Gy) which is defined as the amount of energy deposited by ionising radiation in a substance.

Regulated facility

17. This is the term used in the Environmental Permitting (England and Wales) Regulations. Those regulations provide that any regulated facility must be operated only under and in accordance with an environmental permit.

Well stimulation fluids

18. Fluids, often water, mixed with additives used to encourage more oil and gas to flow from a particular rock formation

Brief outline of the process

19. Under the existing permit the operator is permitted to accumulate and transfer radioactive waste to an appropriately permitted facility under the standard rules permit SR2014: No.4 'Norm waste from oil and gas production'. This waste consists of produced water from the production of oil and gas and solid waste in the form of NORM contaminated equipment. The operator now wishes to receive aqueous radioactive waste, in the form of produced water from similar sites, to be re-injected into the rock strata from which oil is being extracted at the site.
20. The application was made for a permit for the management of radioactive waste resulting from the NORM industrial activity of production of oil and gas. The produced water from the oil and gas production will be expected to contain NORM in sufficient quantities to be classed as radioactive waste. Solid wastes from the activities on site, such as pipeline scale and sediment, may also contain NORM in sufficient quantities to be classed as radioactive waste. The permit also recognises that a residual layer of fluids from the process, which may contain NORM, may remain in the area adjacent to the wellbore. This would constitute a disposal of radioactive waste, occurring in the area of or immediately adjacent to the well. This disposal has been taken into account in our decision.
21. The produced water (whilst accumulated on the premises), drill cuttings, spent drilling muds and other fluids and waste gases arising from the production of oil and gas are considered to be extractive waste and as such fall under the Mining Waste Directive. The activity of managing these extractive wastes is classified as a mining waste operation with no mining waste facility and will also be regulated by the Environment Agency by means of a separate permit subject to the EPRs; reference EPR/BL9763IN.

Record of decision

22. We have decided to vary the permit specified below.
- 23.

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The permit number is EPR/RB3994DK/V002 replacing permit number EPR/RB3994DK/A001.

The applicant is Angus Energy Weald Basin No 3 Limited

The facility is located at Brockham Oilfield, Feltons Farm, Old School Lane, Brockham, Betchworth RH3 7AU

The decision is effective from 28 November 2022

24. We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure the appropriate level of protection of people and the environment. These considerations and legal requirements are set out in the published government and Environment Agency guidance supporting the EPRs.

Reasons for our decision

25. Unless specified otherwise below, we have accepted the applicant's proposals.

Justification

26. Justification is the process by which Government decides whether types of practices involving radiation are acceptable, as set out in The Justification of Practices Involving Ionising Radiation Regulations 2004 (the Regulations’).
27. The practice is justified – existing practice 31 Activities that may result in the occurrence of naturally occurring radioactive material (NORM) [The production of oil and gas].

Operator and operator competence

28. We are satisfied that the applicant is the person who will have control over the operation of the facility after we grant the permit in line with our [‘Legal operator and competence requirements: environmental permits’](#).
29. We have assessed the operator’s management arrangements against our guidance (see [How to comply with your EPR RSR environmental permit – open sources and receipt, accumulation and disposal of radioactive waste on non-nuclear sites](#)). Having considered the information submitted in the application, we are satisfied that appropriate management systems and management structures will be in place. Also, they ensure that accidents are prevented but that, if they should occur, their consequences are minimised. We have not identified any reasons indicating that the operator will be unable to operate in accordance with the permit.

Disposal of radioactive waste – optimisation

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30. The principle of optimisation is that all reasonable efforts be made to reduce radiation doses (social and economic factors being taken into account) to as low as reasonably achievable (ALARA). Optimisation is one of the three principles of radiation protection, the others being justification (see above) and limitation. In the case of the potential for public exposure to radiation from activities involving radioactive substances optimisation in waste management including disposals to the environment is required.
31. We have assessed the operator's proposals against our guidance on 'best available techniques' BAT (see [RSR : Principles of optimisation in the management and disposal of radioactive waste](#)) to minimise radioactive waste creation and disposals, minimise the time over which radioactive waste is accumulated, and select appropriate disposal routes.
32. We are satisfied that the operator has demonstrated that the best available techniques will be used to minimise the creation of radioactive waste and the activity in and volume of radioactive waste to be disposed of.

Disposal routes and permit limits

33. Permit conditions specify certain key measures for this type of process to protect members of the public and the environment. We have used the relevant generic conditions from our bespoke permit template along with other process-specific conditions to ensure that the permit provides the appropriate standards of environmental protection.
34. Our generic conditions allow us to deal with common regulatory issues in a consistent way and help us to be consistent across the different types of radioactive substance activities.
35. The permit limits the length of time that the solid and aqueous waste can be stored to three months and the maximum activity in the accumulated aqueous waste to 30 MBq of Ra-226 and 30 MBq Ra-228. There is no limit to the accumulation activity for solid waste. These limits were requested by the applicant and are the same as in the standard rules permit. The only change to the standard rules permit is that the site will be allowed to accept aqueous radioactive waste.
36. The operator was asked to demonstrate that they had contracts in place or could readily put contracts in place for the disposal by transfer of aqueous and solid waste. The operator provided evidence that contracts could be readily put in place. The operator has submitted letters of acceptance for the waste which could be produced on site. In practice all aqueous radioactive waste would be injected into to the oil reservoir and solid radioactive waste may not be generated.

Assessment of the radioactivity in discharges and disposals

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37. We are satisfied that the operator has identified appropriate measures to assess the radioactivity in discharges and disposals on and from the premises.
38. We are requiring the operator to sample and analyse any accumulated produced water and any solid waste that is generated.

Radiological assessment

39. The operator has not had to assess the radiological impacts of any transfers of radioactive waste to another operator, for example the transfer of aqueous waste to a waste disposal operator for treatment and disposal. This is because we have assessed the impacts of disposals from the waste disposal operators when we issued their permits.
40. The operator has not had to assess the radiological impacts of any fluids that are left underground because there is no pathway that could lead to the radiological exposure of members of the public or the environment from such disposals.
41. The waste gas that is flared may contain small quantities of entrained NORM, and so the permit allows for the disposal gaseous waste to air. We have assessed the environmental and health impacts of NORM in flared gas and found it to be negligible.
42. We are satisfied that the authorised accumulation and disposals of radioactive waste will not give rise to any dose exceeding the public dose limit of 1000 microsieverts per year, and the source dose constraint of 300 microsieverts per year.
43. We are satisfied that reference flora and fauna would be exposed to a maximum dose-rate within our guideline value of 40 micrograys per hour. The discharges will thus have no significant adverse impact on a European site, Site of Special Scientific Interest (SSSI) or Area of Outstanding Natural Beauty (AONB).

Consultation and Web Publicising

44. Consultation commenced on: 7 October 2022

Consultation ended on: 4 November 2022

45. We advertised the Application by a notice placed on our website, which contained all the information required by the regulations, including telling people where and when they could see a copy of the Application.
46. A news release about the consultation was sent to a range of newspaper, TV and radio outlets on the 10th October and a reminder tweet on the 1st November. Local interest groups and the MP were notified by email.
47. Over 95 responses were received from groups and members of the public. 7 responses supported the variation, the remainder objected and/or identified concerns relating to it. The concerns expressed have been summarised below in Annex 1 and

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answers given. Many of the answers are not specific to this application and can be found in the decision document for the variation of the installations permit BL9763IN which can be found here [RH3 7AU, Angus Energy Weald Basin No.3 Limited: environmental permit issued - EPR/BL9763IN/V005 - GOV.UK \(www.gov.uk\)](#). We have taken all relevant representations into consideration in reaching our determination.

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Annex 1: Consultation and web publicising

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process.

| Brief summary of issues raised | Summary of actions taken or show how this has been covered |
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| <p>Many responders were concerned about the potential for the pollution of groundwater and surface water due to unsuitable geology or leakage of the well.</p> | <p>The risk of pollution from NORM in the produced water would be the same as other contaminants and therefore the assessment carried out in the determination for permit variation EPR/BL9763IN/V005 would be applicable (see the link above). The decision document for that variation states ‘The Environment Agency confirmed (upon reviewing the proposed activity and the supplementary Hydrogeological Risk Assessment provided) that it was satisfied that groundwater monitoring is not required at the site because there is no significant risk to any known shallow groundwater receptors and sufficient mitigation measures and procedures are in place to prevent any potential impact on groundwater.’</p> <p>We conclude from this assessment that there will be no radiological impact from any fluids that are injected underground because there is no pathway that could lead to the radiological exposure of members of the public or the environment from such disposals.</p> |
| <p>Many responders were also concerned about the potential impact on people’s health and wanted assurances that health is not being affected by the operation.</p> | <p>The application is to allow the receipt of produced water containing NORM at the site, which is not permitted under the standard rules permit the operator currently has at the site. The permitted storage activity and the period of accumulation will not change from the standard rules permit which is considered a low-risk activity. The main concern comes from the perceived risk of injecting NORM contaminated produced water into the rock strata from which oil is being extracted. This produced water will be of a similar nature to that being brought up with oil production at the site and therefore the risk will not change.</p> |

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| | <p>The decision document for the variation of the installations permit states 'we are satisfied that the Supplementary HRA demonstrates the importance of well integrity and includes robust re-injection procedures, and detailed monitoring procedures.' Therefore, we deem the risk of the NORM contaminated produced water re-entering the surface environment, where it may impact on people and wildlife, is deemed to be negligible.</p> |
| <p>How is the quality of water monitored? Quarterly monitoring is not adequate.</p> | <p>Monitoring is required by way of a specification made under condition 3.2.1 and 4.2.2 of the permit which was issued with the standard rules permit and remains in effect. This requires the operator to determine by analysis the total disposals, both off-site and by re-injection, each month. It also requires the total activity stored on-site to be determined at the end of each month.</p> <p>The water will normally be sampled by the operator's staff and sent to an accredited laboratory for gamma spectrometry and alpha analysis. There will need to be a procedure describing how the waste is sampled and appropriate training for staff carrying out the sampling to ensure consistency. The results will build up a picture of the radioactive content of the produced water which may vary over time.</p> |
| <p>What restrictions are there to the quality, contamination, volume, or source of the water to be received on site?</p> | <p>The radioactive substances permit does not impose quality or volume limits on the incoming water, but it must be from oil and gas production with the radioactive component being only due to naturally occurring radioactive material (NORM). The permit sets limits on the amount of activity on site at any one time and the length of time it can be stored and these are set at the same level as the standard rules permit – 30 MBq and 3 months. This means the operator cannot keep receiving waste if they are unable to re-inject into the reservoir from which oil is being produced. It also means that if the activity ceases, then all waste must be removed within 3 months.</p> <p>These limits relate to the storage above ground and not to the produced water once it has been injected into the oil reservoir. The installations permit BL9763IN includes limits relating to the rate that produced water can be injected and states which borehole and strata it can be injected into.</p> |

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| <p>Will the groundwater monitoring results be made public?</p> | <p>Any monitoring the operator carries out which is required by the permit will be uploaded to the Environment Agency's Document Management System (DMS) which can be viewed by the public or documents can be requested under the Freedom of Information Act. The information will not be published on-line.</p> |
| <p>How can we be sure only produced water is re-injected?</p> | <p>The radioactive substances permit will only allow the receipt and injection of produced water from oil and gas extraction which will therefore have similar properties to the produced water from the site's operations. If the operator receives other liquid radioactive wastes for disposal, they will be committing an offence and we will take enforcement action if this is discovered.</p> |
| <p>Many responders were concerned of the possibility that earth tremors may be caused by the injection of produced water or that the geology is unstable and/or unsuitable.</p> | <p>This permit only relates to the radiological aspects of the operation, however this question was answered in the decision document for the installations permit variation and the response was: 'Assessing the potential for seismicity is not within the scope of our regulation, therefore we are not able to comment on any checks that may or may not have been made to assess whether re-injection could be linked to seismic activity. The North Sea Transition Authority (formerly the Oil and Gas Authority) are the lead authority for reviewing seismic events that may be associated with oil and gas production or exploration. They work closely with the British Geological Survey to determine whether there are any potential links. The Health and Safety Executive (HSE) lead on well integrity at oil well sites. If you have concerns in relation to these aspects, please contact the relevant authority.'</p> |
| <p>What controls are there that the pressure in reservoir will remain safe?</p> | <p>The installation permit contains limits on produced water injection volumes and rates which have been determined to appropriate from an environmental perspective. This is discussed in the installations permit decision document. The potential for the injection of produced water to cause earth tremors or other geological effects are outside the scope of the schedule 23 of EPR.</p> |
| <p>If produced water is continuously added to a tank how can the 3 months</p> | <p>Whilst it is true that if a tank was continuously used, and not emptied every 3 months, we would not be able to prove that produced water was</p> |

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| <p>storage limit be regulated? Another stated 3 months was too long.</p> | <p>never stored for longer than 3 months. However, we would assess this based on records and would expect to see the turn-over of produced water to be significantly greater than the volume of the storage tank over the 3-month period.</p> <p>The 3 months period for storage has been determined nationally as reasonable and is the limit in the standard rules permit.</p> |
| <p>Is water monitoring data assessed prior to the water being injected?</p> | <p>The operator must produce a written specification for any waste that is prepared to receive. However, there is no requirement to carry out analysis on the water before it has been received as to comply with the permit the only restriction is that the waste comes from oil and gas production and its radioactive content is due to NORM. The only monitoring required is to establish the monthly disposal and accumulation of radioactive waste.</p> |
| <p>Concerns were raised about how solid radioactive waste would be managed.</p> | <p>Solid radioactive waste will only be that waste produced by the operations at the site which has become radioactive due to the deposit of contamination of NORM. This will mostly be pipework where contaminated scale has built up through normal operations. Some sites do not generate solid radioactive waste at all, but the operator will need to monitor all pieces of equipment before it is removed from site to ensure it is managed appropriately. Records will need to be maintained for the monitoring carried out.</p> <p>The accumulation and transfer of solid radioactive waste is allowed under the existing permit and the conditions relating to this will not change.</p> |
| <p>The EA should not allow radiation from elsewhere to be imported to the area.</p> | <p>The determination of the RSR permit can only take into account the activities on the site and doesn't assess the source of radioactive waste except to require that it is produced water from oil and gas production with the radioactive component being only due to naturally occurring radioactive material (NORM).</p> |

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| <p>Many responders were concerned about the potential effect on the local environment and wildlife.</p> | <p>The impact of the general operations does not come within the scope of schedule 23 of the EPR and is therefore not referred to or assessed in the permit determination. The impact of radioactive emissions to the environment are assessed when there is release to the environment. All waste from the operation will either be transferred to a site permitted to receive such waste or injected into the oil reservoir. In the former case, the site the waste will be transferred to will have their own radiological assessments, and in the latter case there is deemed to be no likely pathway for the aqueous waste to reach the surface.</p> <p>Gaseous radioactive releases from oil and gas activities have been assessed and are deemed to be negligible.</p> <p>A groundwater impact assessment has been carried out for the proposed reinjection of produced water at the premises and is referred to in the decision document for the installations permit. We conclude from this assessment that there is no radiological impact from any fluids that are injected underground because there is no pathway that could lead to the radiological exposure of members of the public or the environment from such disposals.</p> |
| <p>Many responders were concerned that radioactivity would have a negative effect on food and agriculture in the area.</p> | <p>The storage of aqueous waste on the site will only occur in bunded tanks and tankers will unload in a bunded area. In addition, the site has a sealed drainage system so whilst the spillage of aqueous waste on site is possible, the operator has infrastructure and procedures in place to minimise the possibility and consequences of a spillage. The implementation of these procedures and the maintenance of the infrastructure will be assessed during inspections for both the installations permit and the RSR permit.</p> <p>As described above once the produced water is injected into the well there should be no pathway for it to affect the surface or near surface environment.</p> |

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| <p>One responder stated that the activity of the site is not allowed by OGA permission.</p> | <p>This is a matter for the North Sea Transition Authority (NSTA) (previously known as the Oil and Gas Authority (OGA)).</p> |
| <p>Concerns were raised that the re-injection of produced water is not safe.</p> | <p>This is a matter for the North Sea Transition Authority (NSTA) (previously known as the Oil and Gas Authority (OGA)).</p> |
| <p>One responder stated the risk assessment was inadequate.</p> | <p>The operator used the generic risk assessment designed for the standard rules permit. Whilst this is a bespoke permit, all the limits and activities are the same, except that tankers are permitted to be received at site. As the standard rules permit allows tankers to be filled and to remove aqueous waste from site, we do not see that the risk of pollution has increased beyond what has been assessed in the generic risk assessment.</p> |
| <p>Several responders have asserted that the operator is unsuitable and has shown that they will not comply with the permit.</p> | <p>We have assessed the applicant's competence to hold an environmental permit. The applicant already holds environmental permits which we regulate and from our records there is nothing to lead us to believe the operator would not or could not comply with the permit. In addition, the permit gives us sufficient controls to bring the operator into compliance if necessary.</p> |
| <p>A responder questioned how the consultation was shared and advertised.</p> | <p>The consultation was listed on the Citizen Space website and on .gov.uk. A press release was sent out on Monday 10th October 2022 to TV, Radio and newspaper organisations and this was followed up by a twitter reminder. In addition, relevant concerned parties were notified by email.</p> |
| <p>The response from Surrey County council states the operator does not have the appropriate planning permission to accept produced water for re-injection.</p> <p>It also requests the EA 'consider the environmental implications of the proposed activity variation carefully. The justification for the proposal does not seem to relate to the productivity of the well, but only on the basis that the Lidsey site does not appropriately facilitate the reinjection of wastewater.'</p> | <p>Planning permission is not a consideration in determining an environmental permit. The operator would require relevant permissions under planning legislation and EPR to carry out an activity.</p> <p>This application only relates to the RSR activity at the site. The injection of produced water from other sites in general is accepted as an appropriate disposal option with regard to the radioactive content of the waste assuming other controls are in place.</p> |

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| <p>It is also advised 'that required or recommended as part of the Environmental Permit are commensurate with any planning permission approved or required for this site. In issuing any new permit the Environment Agency should advise the applicant to check with the local planning authority of the national and local planning legislation requirements for their site.'</p> | <p>The determination of the radioactive substance permit will not require 'any structures, plant, machinery, equipment or construction and engineering works etc.' that is not required by the installations permit.</p> <p>If the operator proposes any physical or operational changes, we will advise them that they should consult with the local planning authority.</p> |
| <p>Several responders stated that relevant aspects of the operation were not allowed by the planning permission.</p> | <p>As discussed above in response the Surrey County council's response, EPR does not require an appropriate planning permission to be in place prior to the granting a permit.</p> |
| <p>There were a few queries about EA regulation and the inspection frequency.</p> | <p>The Environment Agency will inspect the site in relation to the RSR permit as well as the installations permit. These inspections will be carried out by different inspectors and may be carried out independently or in collaboration. It is expected that on-site inspections relating to the RSR permit will carried out annually with remote assessment of monitoring and other submissions to be carried out as required. More frequent inspections can be made if deemed necessary. The inspections would normally be in agreement with the operator, but unannounced inspections can be carried out if this is deemed necessary to ensure effective regulation.</p> <p>The operator is required to keep relevant records to demonstrate compliance with the permit conditions and they are required to be advised by a certified Radioactive Waste Advisor (RWA).</p> |
| <p>Some responders stated that the Lidsey site can inject its own water and, therefore, the waste should not be transferred to Brockham.</p> | <p>The operator has stated it cannot re-inject water at Lidsey. The EA has not assessed this as the permit would not restrict the acceptance of waste from specific sites, therefore, the fact that Lidsey was able to re-inject its own produced water would not prevent the permit being issued.</p> |
| <p>One responder questioned the need to import water due to the very small quantity of oil being produced at the site.</p> | <p>Table S1.1 of the installations permit defines where the produced water can be injected and that it is for the purposes of production support only.</p> |

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| <p>Responders questioned where the produced water could be brought in from, whether it was just Lidsey or other sites. There were also questions as to what checks are carried out to ensure it is from the same reservoir?</p> | <p>The RSR permit allows produced water to come from anywhere, however, it must be from oil and gas production and the radioactive contaminants must only be NORM. In the application the operator has stated they only intend to receive produced water from the Lidsey site.</p> |
| <p>Several responders objected to the activity based on its risk to climate change and carbon targets.</p> | <p>Climate change does not come within the scope of schedule 23 of the EPR and is therefore not referred to or assessed in the permit determination.</p> |
| <p>One responder stated the activity was not legal under Environmental Protection Act 90 and the Environment Act 2022.</p> | <p>We are satisfied that this activity is a justified practice under the Justification of Practices Involving Ionising Radiation Regulations 2004 and that the issue of the permit would not breach the Environmental Protection Act 90, the Environment Act 2022 or any other UK legislation and it is appropriate to issue a permit.</p> |
| <p>One responder stated the company is having to do this as they have not budgeted properly, and the operation is just saving money.</p> | <p>We have assessed that returning produced water to oil and gas reservoirs is an acceptable practice which minimises the radiological impact to the environment. The assessment of best available techniques (BAT) for a waste management option does take into consideration the financial aspect therefore the fact that this waste management option is cost effective does not mean it is not BAT. This is a common practice at oil and gas sites in the UK.</p> |
| <p>One responder pointed out that the application documents contradicted themselves in that one document stated the imported waste would be pumped directly into the reservoir from the tanker and another stated it would be pumped to a storage tank.</p> | <p>The applicant was contacted about the discrepancy, and they confirmed the waste would be transferred to a storage tank prior to injection.</p> |
| <p>One responder questioned what analysis would be done on waste being transferred from the site.</p> | <p>Waste would be monitored and/or analysed to determine whether it was radioactive. If waste is radioactive it would need to be transferred to site capable of receiving such waste which would have waste acceptance criteria that would need to be met. The records of the monitoring and analysis would need to be kept by the operator.</p> |

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| <p>One responder stated the permit should restrict working hours and another asked whether tanker deliveries could be restricted.</p> | <p>We do not include restrictions on operational hours in our permits as this would be a matter for the local authority.</p> |
| <p>What changes will be made to the installations permit by this variation?</p> | <p>The RSR permit will not affect the regulation of the installations permit and both permits must be complied with.</p> |
| <p>One responder stated that the government does not allow fracking and therefore this activity should not be allowed.</p> | <p>This aspect is regulated by the installations permit (BL9763IN). The operator is not proposing to carry out fracking and is not permitted to under the installations permit. As discussed in the decision document for the installations permit variation, the re-injection of water into the reservoir will be carried out at pressures below the fracture pressure of the formation.</p> |
| <p>One responder stated that the activity is near a SSSI and protected bats and should not be allowed to continue.</p> | <p>As the permit would not allow the discharge of radioactive substances to the environment, except to the oil reservoir, there should be no radiological impact on the local environment. Other operational matters are not covered by the RSR permit.</p> |
| <p>One responder stated the activity is not in line with the EA's own sustainability goals.</p> | <p>The EA's sustainability goals relate mainly to direct emissions from the organisation's activities. Whilst we may have influence on the environmental impact of the activities, we regulate this is not considered in Schedule 23 of EPR.</p> |
| <p>One responder questioned what controls there were on importing radon.</p> | <p>Radon is a naturally occurring radioactive gas that results from the decay of radium-226, and to a lesser extent radium-228. Only naturally occurring radioactive substances listed in Part 3 Table 1 of Schedule 23 are regulated under the EPRs. Radon is not listed and so is outside the scope of the EPRs. This means the Environment Agency does not regulate its accumulation and disposal under RSR permits. We have a responsibility to take account of exposure to radon, where the radon arises from the decay of radium that is being accumulated under an RSR permit. This is explained in paragraph 2.11 of the <u>Guidance on the scope of and exemptions from the radioactive substances legislation in the UK</u>.</p> |

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| | <p>Public Health England (PHE) is responsible for assessing the general impact of radon. In 2014 PHE published a “Review of the Potential Public Health Impacts of Exposures to Chemical and Radioactive Pollutants as a Result of the Shale Gas Extraction Process”. The report relates to fracking, but much of it also applies to conventional oil and gas, which are broadly similar operations apart from the step of hydraulic fracturing [fracking] of the oil and gas bearing rock formation.</p> |
| <p>One responder stated the EA has a poor record of regulation especially in relation to the river mole.</p> | <p>The EA will regulate permitted sites in accordance with the regulators code which can be found here How the Environment Agency meets the Regulators' Code - GOV.UK (www.gov.uk)</p> |
| <p>There were numerous objections and concerns relating to HGV traffic, inadequate road infrastructure and the potential for accidents during the transport of produced water to the site.</p> | <p>The RSR permit only relates to the radioactive substances activities within the boundary of the site. The transport of radioactive waste is regulated by the Office for Nuclear Regulation.</p> <p>The Environment Agency’s principal legislation for regulating waste activities is the Environmental Permitting (England and Wales) Regulations 2016. These Regulations specifically preclude us, in paragraph 3(b) of Schedule 9, from “addressing nuisances and hazards arising from traffic beyond the site of a waste operation”. Therefore, we cannot include conditions in our permits which address the volume of, or emissions from, traffic.</p> <p>Vehicle movements are specifically covered by planning legislation, which falls under the remit of the Local Authority, which we do not have any powers to enforce.</p> |
| <p>There were numerous objections and concerns relating to the operations on site giving rise to noise, air, odour and light pollution.</p> | <p>These are all issues which are not within the remit of schedule 23 of the EPR. They are either regulated under the installations permit (BL9763IN) or are a matter for the local authority.</p> |
| <p>Several responders gave no reason for their objection but just stated they didn’t want the activity to be allowed.</p> | <p>The determination of the permit can only be assessed against relevant criteria, and we can’t take account of the wish of responders that the activity should not be allowed.</p> |

Environment Agency Permitting Decisions

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| One responder stated this operation will have a negative effect on the local economy/house prices. | This is not a consideration for the determination of this permit. |
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