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Home > Business and industry > Business and the environment

Guidance Risk assessments for your environmental permit

When you need to do an environmental risk assessment, when the Environment Agency will do it for you, and how to do a risk assessment.

From: Environment Agency (/government/organisations/environment-agency) and Department for Environment, Food & Rural Affairs (/government/organisations/department-forenvironment-food-rural-affairs) Published 1 February 2016 Last updated 21 November 2023 —

Applies to England

Guidance for Northern Ireland (https://www.doeni.gov.uk/topics) Guidance for Scotland (https://www.sepa.org.uk/regulations/authorisationsand-permits/) Guidance for Wales (https://naturalresources.wales/permits-andpermissions/?lang=en)

Related content

Protected sites and areas: how to review planning applications (/guidance/protected-sitesand-areas-how-to-reviewplanning-applications)

Inorganic chemicals sector: additional guidance

Contents

- Generic risk assessment for standard rules permits
- — Risk assessments for bespoke permits
- When the Environment Agency can do your risk assessment
- How to do a risk assessment
- — Risks from your site
- — Identify receptors
- — Check for protected sites and species
- Risks from your specific activity
- Bespoke permits: detailed modelling
- — Control risks
- — Submit your risk assessment
- Contact the Environment Agency

Read this guide to find out:

- when you do or do not need to do a risk assessment
- when the Environment Agency can do your risk assessment for you
- how to do a risk assessment
- · how to check for protected sites and species

Generic risk assessment for standard rules permits

You do not need to do your own risk assessment if you are applying for a standard rules permit and can meet all the requirements for that permit.

The Environment Agency has done generic risk assessments for all standard rules permits. These list the potential risks and how to manage them. You need to check the generic risk assessment for the standard permit you are applying for so you understand the potential risks and can manage them effectively. <u>(/government/publications/</u> inorganic-chemicalssector-additionalguidance)

Select a waste recovery or disposal method for your environmental permit (/guidance/selecta-waste-recovery-ordisposal-method-for-yourenvironmental-permit)

Control and monitor emissions for your environmental permit (/guidance/control-andmonitor-emissions-foryour-environmentalpermit)

<u>H1 annex D2:</u> <u>assessment of sanitary</u> <u>and other pollutants in</u> <u>surface water</u> <u>discharges</u> (/government/publications/ h1-annex-d2-assessmentof-sanitary-and-otherpollutants-in-surfacewater-discharges)

Detailed guidance

Reservoir discharges: consents, permits and risk assessments (/guidance/reservoirdischarges-consentspermits-and-riskassessments)

Risk assessments for bespoke permits

You must do a risk assessment if you want to apply for or change (vary) a bespoke permit, unless the Environment Agency can do your risk assessment.

If you are applying for a bespoke permit but most of your activities are covered by standard rules, you only need to do a risk assessment for the activities or risks that are not covered by the generic risk assessment for those standard rules.

For example, if your site is likely to create noise or odour problems for nearby homes, but otherwise meets all the standard rules requirements, you should complete a risk assessment for noise or odour emissions (for the entire site).

If your site processes biowaste you must make sure that any people living or working near your site are not exposed to unacceptable levels of bioaerosols. The Environment Agency will not usually permit biowaste sites within 250 metres of places where people live or work, unless your risk assessment demonstrates that you are controlling emissions to an acceptable level.

Contact the Environment Agency if this situation applies to you.

Find out what activities are covered by standard rules permits (https://www.gov.uk/government/collections/standardrules-environmental-permitting). You will find the generic risk assessment on the same page as the standard rules permit for your activity.

When the Environment Agency can do your risk assessment

You can ask the Environment Agency to do a risk assessment for you in some cases if:

you are a farmer discharging certain substances to ground

 your activities discharge domestic treated sewage to surface water or to the ground (depending on the discharge volume limits and your site's environmental sensitivity)

Contact the Environment Agency before you submit your permit application if after reading this guide you are unsure whether the Environment Agency will do your risk assessment for you.

You must still complete your whole permit application. The Environment Agency will use your completed permit application to decide if it will do your risk assessment for you.

Farmers

The Environment Agency can do your risk assessment if you are a farmer applying for a bespoke permit to discharge any of the following to ground:

- waste sheep dip
- waste pesticide
- pesticide washings (liquid waste left over from washing or cleaning equipment used to apply pesticides)

You must provide all the information required on your application for the Environment Agency to do your risk assessment for you. If you do not, your application will be rejected as it cannot be processed.

Treated sewage effluent or trade discharges

The Environment Agency will generally do your risk assessment if you are applying for a permit to discharge:

- less than 15 cubic metres of treated sewage to ground, for example from a septic tank or small sewage treatment plant, outside a <u>groundwater</u> <u>source protection zone 1 (SPZ1)</u> (<u>https://www.gov.uk/guidance/groundwater-source-</u> protection-zones-spzs)
- treated sewage or trade effluent into a river

 less than 2 cubic metres of treated sewage to ground in a groundwater SPZ1, for example from a septic tank or small sewage treatment plant

Trade discharge includes those that are a mix of trade effluent and domestic treated sewage which share a treatment facility and the same monitoring point.

You must do your own risk assessment if any of the following apply:

- you are a water company or similar large operator
- you are making a treated sewage or trade effluent discharge to surface water which contains specific substances or may have an impact on temperature
- you are making a treated sewage or trade effluent discharge to a lake, estuary, coastal water or bathing water
- you are making a trade effluent discharge to ground, including discharges which may have an impact on temperature
- your discharge of treated sewage to ground is more than 15 cubic metres per day
- your discharge to ground is more than 2 cubic metres per day and you are in a groundwater SPZ1

Human cemeteries

You must do your own risk assessment if you are applying for a bespoke groundwater activity permit for a human cemetery.

How to do a risk assessment

Follow these steps to do a risk assessment.

- 1. Identify and consider risks for your site, and the sources of the risks.
- 2. Identify the receptors (people, animals, property and anything else that could be affected by the hazard) at risk from your site.

- 3. Identify the possible pathways from the sources of the risks to the receptors.
- 4. Assess risks relevant to your specific activity and check they are acceptable and can be screened out.
- 5. State what you will do to control risks if they are too high.
- 6. Submit your risk assessment as part of your permit application.

You must also include a copy of your risk assessment in your <u>management system</u> (https://www.gov.uk/guidance/develop-a-managementsystem-environmental-permits).

Risks from your site

In your risk assessment you must identify whether any of the following risks could occur and what the environmental impact could be:

- any discharge, for example sewage or trade effluent to surface or groundwater
- accidents
- odour (not for standalone water discharge and groundwater activities)
- noise and vibration (not for standalone water discharge and groundwater activities)
- uncontrolled or unintended ('fugitive') emissions, for which risks include dust, litter, pests and pollutants that should not be in the discharge
- visible emissions, for example smoke or visible plumes
- release of bioaerosols, for example from shredding, screening and turning, or from stack or open point source release such as a biofilter

If you do not think any of them are significant risks, you will need to state why in your permit application.

You can 'screen out' potential risks from emissions to air, discharges to water or deposition onto land by carrying out tests to check whether they are within acceptable limits or environmental standards. If they are, you do not need to do any further assessment of the pollutant because the risk to the environment is insignificant. The different risk assessments for specific activities explain 'screening out' in more detail.

The Environment Agency can ask you to redo your risk assessment if it thinks you have not been accurate enough about your risks or problems.

For each risk that applies, identify each actual or possible hazard and state (for example in a table):

- the hazard for example dust, bioaerosols, litter, type of visible emission
- the process that causes the hazard, for example shredding and turning green waste
- the receptors people, animals, property and anything else that could be affected by the hazard
- the pathways how the hazard can get to a receptor
- what measures you will take to reduce risks
- probability of exposure, for example whether a risk is unlikely or highly likely
- consequences what harm could be caused
- what the overall risk is, based on what you've already stated in the table – for example 'low if we apply the management techniques'

Example risks

Hazard: emissions to air – dust from screening plant 3

- receptor: people living at Land End Cottage R1 400 metres east of the site
- pathway: wind-blown
- risk management techniques: visual dust monitoring in accordance with local operating procedure. Shift manager is responsible for checking wind strength and direction, and will stop operations if necessary
- probability of exposure: dust could potentially reach the dwelling when a strong wind blows in that direction, approximately 50 days a year

- consequence: nuisance dust on cars, clothing, and so on
- overall risk: low if we use the management techniques

Hazard: pests – flies on farmyard manure could move offsite and affect nearby residents

- receptor: local residents or school beyond the boundary of the activity
- pathway: airborne
- risk management techniques: isolation and securing or removing waste that attracts scavengers. Regular inspections by nominated personnel
- probability of exposure: waste left unattended could result in problems offsite
- consequence: potential for spread of disease and adverse health impacts on vulnerable people
- overall risk: low if we use the management techniques

Risks from noise and vibration

The Environment Agency may ask you to submit a noise and vibration impact assessment and a noise management plan if:

- your activity uses noisy plant or machinery, for example cooling equipment or fans
- you will be doing any noisy operations, such as loading or unloading, shredding, shearing, crushing, grinding, combustion, using trommels and conveyors or moving bulk materials
- your activities are not contained within buildings
- some of your activities take place at night
- the area where you are planning to carry out your activity is sensitive to noise, for example rural areas may have quieter background noise levels than urban areas
- there are sensitive receptors close to the site, for example houses or habitats

The noise impact assessment for human residential receptors must be done in line with the BS

4142:2014 standard and by a suitably qualified person.

When you apply for a variation, do not include noise from the existing site (before changes) as part of the background. This is known as the 'residual level' in BS 4142:2014. Your noise impact assessment must consider all the noise resulting from the proposed variation – the existing site and the variation together. Show both components clearly and then add them together to give a new total for site noise at the receptors. The impact assessment will be based on this new value, known as the 'specific level' in BS 4142:2014.

Sometimes waste activities operate alongside mineral activities, for example in quarry landfills. If the noise from waste activities is likely to have an impact on local receptors you must complete a BS 4142 noise impact assessment for these waste activities. Consider the impacts that will occur when activities are close to the restored level and close to receptors. Provide estimated durations for these.

In addition, you must supply details of noise levels from mineral activities at local sensitive receptors so that the Environment Agency understands the context of the waste activities. Note that planning conditions, including noise limits, may not be valid for permit applications.

If you are not sure whether you need a noise and vibration impact assessment and a noise management plan, contact the Environment Agency for advice through the <u>pre-application advice</u> <u>service</u> (https://www.gov.uk/government/publications/environment

al-permit-pre-application-advice-form).

When you ask for advice through the preapplication service you must provide, at a minimum, the following information:

- a description of your proposed activities
- whether the activities will take place indoors or outdoors
- whether operations will be at night

 a map, with OS National Grid References included, clearly showing the site boundary

The Environment Agency will consider this information and tell you if:

- you need to provide a noise and vibration impact assessment and a noise management plan
- your proposal is low risk

You can find further guidance on noise impact assessments and noise management plans in Noise impact assessments involving calculations or modelling (https://www.gov.uk/guidance/noise-impactassessments-involving-calculations-or-modelling) and Noise and vibration management: environmental permits (https://www.gov.uk/government/publications/noise-and-

vibration-management-environmental-permits).

Identify risk of accidents

Examples of possible accidents include:

- transferring substances, for example loading or unloading vessels
- overfilling vessels
- plant or equipment failure, for example over pressurised vessels and pipework, blocked drains, fire and contaminated water used to fight the fire escaping into the local watercourse or ground
- releasing an effluent before checking its composition
- vandalism
- flooding
- inadequate bunding around tanks

There could also be a risk of accidents related to your specific industry.

Assume that operator error will occur at least once every 100 times you carry out an operation, for example you may:

• drop or damage a drum from a forklift

have a spillage from a tanker

Identify emissions

Emissions include:

- releases to air, for example from storage of raw materials or wastes, or evaporating volatile organic compounds, dust or bioaerosols
- releases to water and land, such as potential leaks or spills from storing or handling liquids or chemicals that could harm the environment
- uncollected runoff from operational and storage areas
- mud that could get off the site
- pests that could get off site, such as flies
- pollutants that are in your release at levels which do not need emissions limits but where you do need to use other measures to make sure they do not cause pollution

Read the guide to <u>controlling and monitoring</u> emissions (https://www.gov.uk/guidance/control-andmonitor-emissions-for-your-environmental-permit).

Identify receptors

You must identify all the receptors that are potentially at risk from your site.

Focus on the main receptors that are at risk, for example for a sewage discharge to ground, the main receptor will be the groundwater beneath your site, but there may be other receptors nearby that you must also identify.

Receptors include:

- protected sites and species

 (https://www.gov.uk/topic/planningdevelopment/protected-sites-species)
- anywhere used to grow food or to farm animals or fish – check local maps or contact the Environment Agency
- drain and sewer systems you can ask your local water company about these

- factories and other businesses
- fields and allotments used to grow food
- footpaths
- groundwater beneath your site check <u>Magic</u> <u>map (http://magic.defra.gov.uk)</u> to find out if your site is in a groundwater source protection zone
- homes, or groups of homes (such as villages or housing developments) – you can check local maps or ask your local council about these
- playing fields and playgrounds
- private drinking water supplies you can ask your <u>local council (https://www.gov.uk/find-your-localcouncil)</u> where these are located or ask your neighbours if they have a private supply
- regionally important geological sites you can ask your local council about these
- schools, hospitals and other public buildings
- water, for example ponds, streams, rivers, lakes or the sea – you can check where these are on local maps or with the Environment Agency
- conservation and habitats protected areas and areas of scientific interest

In your risk assessment you need to include a plan that's to scale, for example on an Ordnance Survey map. It must show:

- your site
- all the nearby receptors

Check for protected sites and species

You are responsible for finding out if your development or activity is likely to affect a protected site, species or other wildlife. The Environment Agency may not grant your permit if your development or activity may damage protected sites or species.

Pre-application stage

You can ask the Environment Agency to check for protected sites, species and other wildlife by using

their pre-application advice service

(https://www.gov.uk/government/publications/environment al-permit-pre-application-advice-form). Heritage and nature conservation screening will identify if there are any protected sites, species or other wildlife relevant to your proposed activity. If there are, the Environment Agency will give you a map and information pack.

Heritage and nature conservation screening will identify other protected features not currently found within <u>Magic map (http://magic.defra.gov.uk)</u>, such as local wildlife sites and protected species. <u>Find out</u> <u>how to use Magic map</u> (<u>https://www.gov.uk/guidance/protected-sites-and-areashow-to-review-planning-applications#check-if-a-</u> protected-site-is-affected).

Application stage

When the Environment Agency receives your application they will check if it could harm protected sites, species or other wildlife. The distances they use for this screening vary between different activities and different receptors.

The Environment Agency will check if your proposed activity could affect:

- national parks (https://www.nationalparks.uk/)
- <u>areas of outstanding natural beauty</u> (http://www.landscapesforlife.org.uk/)
- sites of special scientific interest (https://www.gov.uk/protected-areas-sites-of-specialscientific-interest)
- <u>special areas of conservation</u> (<u>https://www.gov.uk/guidance/conservation-objectives-</u> for-land-based-protected-sites-in-england-how-to-usethe-site-advice)
- <u>special protection areas</u> (https://www.gov.uk/guidance/conservation-objectivesfor-land-based-protected-sites-in-england-how-to-usethe-site-advice)
- <u>Ramsar sites (wetlands) (http://www.ramsar.org/)</u>
- <u>marine conservation zones</u> (<u>https://www.gov.uk/government/policies/protecting-and-sustainably-using-the-marine-</u>

environment/supporting-pages/marine-protectedareas)

- <u>ancient woodland</u> (<u>https://www.gov.uk/guidance/ancient-woodland-and-</u>veteran-trees-protection-surveys-licences)
- <u>local sites (https://www.gov.uk/check-your-business-protected-area)</u>

You can use <u>Magic map (http://magic.defra.gov.uk)</u> to find all these sites apart from local sites. You can usually get information about local sites from the <u>local ecological records centre</u> (http://www.alerc.org.uk/lerc-finder.html).

When the Environment Agency determines your application they may carry out assessments to decide whether your activity could affect protected sites. They may need to notify or consult Natural England (or Natural Resources Wales) about these assessments. Natural England usually take 28 calendar days to respond. This may impact on the time it takes for the Environment Agency to determine your application.

The Environment Agency may need to ask you for more information to help them do these assessments. For example extra survey information or more details on your application.

Priority habitats

These are called 'habitats of principle importance for the conservation of wildlife in England'. You can use <u>Magic map (http://magic.defra.gov.uk)</u> to find the following priority habitats:

- protected or priority species
- nationally and internationally protected species
- species of principle importance for conservation of wildlife in England

The protected species information the Environment Agency uses is not available on Magic map. You may need to request information from a local ecological records centre. If protected species could be affected by the proposed activity, you may need to commission a survey by an experienced and qualified ecologist.

The Environment Agency uses the surveys and assessments you provide in their decision-making.

If protected species are present, you may need a licence from Natural England or the Welsh Government to handle the species or carry out the proposed works.

The Environment Agency advises you to get the necessary licences, or agree mitigation with the relevant bodies (such as Natural England, Natural Resources Wales or wildlife trusts) before you submit your application.

Find out how to avoid harming protected areas and species during development work (https://www.gov.uk/guidance/construction-near-protected-areas-and-wildlife).

Historic buildings, listed buildings and archaeological sites

You can check with any of these to find out if you have historic or listed buildings, or archaeological sites, near your site:

- your local planning authority (<u>https://1app.planningportal.co.uk/YourLpa/FindYourLp</u> a?searchText=)
- the Institute of Historic Building Conservation (http://www.ihbc.org.uk/)
- the National Trust (http://www.nationaltrust.org.uk/)
- the county archaeologist at your county council

Risks from your specific activity

There are additional risk assessments you must do depending on:

- the activity your bespoke permit relates to
- where substances are released or discharged into the environment

When you've done one of those risk assessments it will show if you need to take further action regarding the substances you release.

Risk assessment for installations, waste and mining waste operations and landfill sites

If you are an installation or a landfill site, or your activity involves storing, processing or treating waste or biodegradable waste, you must do one or more of the following, depending on the substances you discharge and where they are discharged to:

- <u>assess the risks of your air emissions</u> (https://www.gov.uk/guidance/air-emissions-riskassessment-for-your-environmental-permit)
- calculate the global warming impact of your air emissions (https://www.gov.uk/guidance/assess-theimpact-of-air-emissions-on-global-warming)
- <u>assess risks to groundwater</u> (<u>https://www.gov.uk/guidance/groundwater-risk-</u> assessment-for-your-environmental-permit)
- assess risk to groundwater from landfill leachate (https://www.gov.uk/guidance/landfill-developmentsgroundwater-risk-assessment-for-leachate)
- assess risks to surface water from hazardous pollutants (https://www.gov.uk/guidance/surfacewater-pollution-risk-assessment-for-yourenvironmental-permit)
- assess risks to surface water from sanitary and other pollutants (https://www.gov.uk/government/publications/h1annex-d2-assessment-of-sanitary-and-otherpollutants-in-surface-water-discharges)

If you are applying for a permit for inert waste landfill or deposit for recovery activities this template (https://www.gov.uk/guidance/landfill-operatorsenvironmental-permits/what-to-include-in-yourenvironmental-setting-and-site-design-report) helps you consider all the risks from your activity.

Installations and waste operations must also <u>decide</u> <u>how to treat, recycle or dispose of waste</u> (https://www.gov.uk/guidance/select-a-waste-recovery-ordisposal-method-for-your-environmental-permit)

Risk assessment for treated sewage or trade effluent discharges to surface water or groundwater

If your activity discharges treated sewage or trade effluent into surface water or groundwater, you will need to do one or both of the following:

- assess risks to surface water from hazardous pollutants (https://www.gov.uk/guidance/surfacewater-pollution-risk-assessment-for-yourenvironmental-permit)
- assess risks to surface water from sanitary and other pollutants (https://www.gov.uk/government/publications/h1annex-d2-assessment-of-sanitary-and-otherpollutants-in-surface-water-discharges)
- assess risks to groundwater (https://www.gov.uk/guidance/groundwater-riskassessment-for-your-environmental-permit)
- assess risks to groundwater from infiltration systems (https://www.gov.uk/guidance/infiltrationsystems-groundwater-risk-assessments)

Risk assessment for human cemeteries

If you are applying for a bespoke groundwater activity permit for a cemetery, you must follow the guidance <u>Cemeteries and burials: groundwater risk</u> <u>assessments (https://www.gov.uk/guidance/cemeteriesand-burials-groundwater-risk-assessments)</u>.

Risk assessment for intensive farming

You must <u>assess risks for intensive farming</u> (<u>https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit</u>) if your activity involves intensive farming.

Help to assess risks for your specific activity

You can use the H1 risk assessment tool to complete and submit any assessment of risks for your specific activity, except for assessing risks for <u>intensive farming</u> (https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit).

The tool:

- includes instructions on how to develop risk assessments
- does calculations required for your risk assessment and screens out insignificant releases
- presents data so that the Environment Agency can assess it properly

The <u>H1 risk assessment tool (https://admlc.com/h1-tool/)</u> and the guidance on how to use it is hosted on the Atmospheric Dispersion Modelling Liaison Committee (ADMLC) website on behalf of the UK environmental regulators.

The tool's calculations are 'worst case' estimates that are often larger than if you do calculations using detailed modelling.

If you do not want to use this tool you can:

- follow the steps in the risk assessment guides
- use other resources such as emission modelling software – you may be charged for this

You can use the <u>J5 Infiltration Worksheet</u> (<u>https://www.gov.uk/government/publications/h1-annex-j5-infiltration-worksheet</u>) to help you with your assessment for groundwater risk assessments for treated sewage discharges to infiltration systems.

Bespoke permits: detailed modelling

The screening process will help you decide whether your releases to air, water or deposited from air to land are a risk to the environment and whether you need to do a more detailed assessment of them. Assessing the impact of emissions which are not screened out and are a risk to the environment is known as 'detailed modelling'.

Detailed modelling requires specialist knowledge. You can <u>find a consultant in ENDS Directory</u> (https://www.endsdirectory.com/) to do it for you. They'll charge for their services. Contact the Environment Agency if you want to do your own detailed modelling.

Control risks

You will need to show how you are managing any risks appropriately by <u>controlling and monitoring</u> <u>your emissions (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit)</u> and through your <u>management system</u> (https://www.gov.uk/guidance/develop-a-management-system-environmental-permits).

Submit your risk assessment

Send your completed risk assessment as part of your permit application to the Environment Agency.

Contact the Environment Agency

Contact the Environment Agency if you need help with your risk assessment.

General enquiries

National Customer Contact Centre PO Box 544 Rotherham S60 1BY

Email enquiries@environment-agency.gov.uk

Telephone 03708 506 506

Telephone from outside the UK (Monday to Friday, 8am to 6pm GMT) +44 (0) 114 282 5312

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Published 1 February 2016 Last updated 21 November 2023 <u>+ show all updates</u>

↑ <u>Contents</u>

Explore the topic

Environmental permits (/environment/environmental-permits)

Pollution and environmental quality (/environment/pollution-and-environmental-quality)

Business and the environment (/business-and-industry/business-and-the-environment)

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