

# Apply for deployment of mobile plant for land and/or groundwater remediation or treatment using a mobile plant (MPP2)

## About your permit

Permit under which this deployment is taking place
Please specify the type of permit and the permit number (EPR number) that you will operate under. If you have more than one permit, you will need to specify which set of conditions to use to make our determination. Note: you can only select one permit type.
SR2008 No27 Mobile plant for the treatment of soils and contaminated material, substances or products.
<b>Permit number:</b> EPR/HP3295VK

Name and address of permit holder (operator)
<b>Name</b> Arcadis (UK) Limited
<b>Address</b> 80 Fenchurch Street
London
-
<b>Postcode</b> EC3M 4BY

Who can we talk to regarding this deployment application?
<b>Name of contact</b> David Atkinson
<b>Organisation</b> Arcadis (UK) Ltd
<b>Address</b> Office 107, WeWork
50/60 Station Road
Cambridge
<b>Postcode</b> CB1 2JH
<b>Phone number</b> 07812 369202
<b>Email</b> david.atkinson@arcadis.com

## Deployment details

Have we been consulted on your Conceptual Site Model/Risk Assessment/Remediation Strategy?

Yes

**If yes, please provide your reference number and the name of the officer who was consulted**

The remediation strategy and implementation plan was presented at a site meeting with Sarah Poulton (NRW Lead Specialist Advisor) on 29 August 2024 with subsequent follow up by email. Remediation targets have been agreed with respect to a voluntary approach.

Have there been any changes to your proposal since its consultation?

Please note: if your proposal has changed, this may require further assessment and may extend the determination time.

No

If you have not received any planning or pre-application advice, would you like this application to be assessed without having remediation targets pre-agreed by us?

Please note it is your responsibility to ensure remediation has been completed to a satisfactory state.

N/A

Have you had any other pre-application advice from us?

No

## About the site

Site name and address

<b>Site name</b>	Bridgend Engine Plant
<b>Address</b>	Waterton Industrial Estate
	Cowbridge Road
	Bridgend
<b>Postcode</b>	CF13 3PJ
<b>12 digit grid reference</b>	293261, 178350

Is your site located within the boundary of another Environmental Permit?

No

Please provide a site plan and ensure the site plan includes all items in the following question.

- File: Figure 2 Site Layout Plan.pdf - [Download](#)
- File: Figure 3 Potential Receptors.pdf - [Download](#)
- File: Figure 4 Operational Site Layout Plan.pdf - [Download](#)

Please tick to confirm your site plan contains the following:

Operating boundary

Security and access arrangements

Areas of waste soils and contaminated material, substances or products for remediation by the mobile plant

Location/siting of principal plant and equipment

Process, treatment, storage, and quarantine areas

Drainage systems

Location of boundary monitoring points and pollution control units

Potential receptors (i.e. housing, watercourses etc.)

Protected sites (if applicable i.e. SAC, SPA, Ramsar or SSSI within 1km)

## Waste types and quantities

If more than five, please upload details below

- File: Waste types and quantities.pdf - [Download](#)

## Specified activities to be carried out on site

Please supply details of how the specified technology is suitable for treatment

A Remediation Options Appraisal and Outline Remediation Strategy has been prepared by WSP (WSP ref: 70116125-001-V3, July 2024). The preferred approach to treat the Chlorinated Volatile Organic Compounds (CVOC) (primarily vinyl chloride, a breakdown product of trichloroethene) in groundwater is to install an In-Situ Reactive Zone (IRZ) downgradient of the plume beneath the Main Assembly Building. The IRZ can be left in-situ without maintenance to allow long-term treatment of the CVOC dissolved in groundwater as the groundwater passes through the IRZ.

As detailed in the Remediation Implementation Plan prepared by Arcadis (30224140-AUK-XX-XX-RP-ZZ-0002-01-RIP\_01, August 2024), the IRZ will be installed via direct push injection of the remedial reagent, EHC® (composed of a controlled-release carbon, zero valent iron (ZVI) particles and nutrients for stimulating in-situ chemical reduction), into the aquifer. EHC® has the added benefit of providing strongly reducing conditions via biotic and abiotic mechanisms, which reduces the potential for further generation of vinyl chloride through dechlorination of trichloroethene.

Pilot testing was successfully undertaken by Arcadis in August and September 2024 to confirm injectability and injection method, radius of influence, and to inform injection volumes.

The proposed IRZ will extend a length of 250m and comprise approximately 77 injection points (based on a radius of influence of 3m) which will be installed to a depth of 10m bgl (full depth of alluvium deposits). The injection points will be staggered along the length of the IRZ and the precise position of each injection point will be determined to avoid existing above and below ground obstructions e.g. existing drainage.

Provide details how residual materials/waste which cannot be treated by the specified technology are to be handled at the site

Impacted groundwater is treated in-situ and is not abstracted as part of the remedial works. No residual materials/waste is anticipated. General waste such as plastic packaging will be stored in a suitable container e.g. skip for off-site disposal in line with UK waste management legislation

Specify the maximum capacities of quarantine facilities to be used for the storage of contaminated materials destined for re-testing, re-processing or off-site disposal.

(Indicate the locations of such quarantine facilities on the site plan)

The remediation methodology comprises an in-situ remedial technology therefore impacted groundwater will not be abstracted or require removal from site.

## Activities involving the import of waste

Will your activity involve the import of wastes?

No

Does the site form part of a Cluster project?

No

## Duration of this deployment

How long do you need this deployment for?

12 months or less

## Management supervision

Technically competent manager

This is the person who will be responsible for compliance with the permit for this deployment. See the guidance notes for further details.

<b>Title</b>	Mr
<b>First name</b>	Richard
<b>Last name</b>	Swarbrick
<b>Telephone - mobile</b>	07870 574405
<b>Telephone - office</b>	07870 574405
<b>Email address</b>	Richard.swarbrick@arcadis.com

Nominated competent person

Provide details of the NCP who will be the main contact for the deployment and who will report to the TCM. See the guidance notes for further details.

<b>Title</b>	Mr
<b>First name</b>	Chris
<b>Last name</b>	Piddington
<b>Telephone - mobile</b>	029 20926 700
<b>Telephone - office</b>	07833 288146
<b>Email address</b>	chris.piddington@arcadis.com

Provide information on the site supervision plan for your technically competent manager. Specify what treatment methods can be operated unsupervised, and provide a justification why this should be the case.

(See 'How to comply with your environmental permit' guidance document for more information)

The proposed groundwater remediation activities will be undertaken concurrently with the on-going demolition works at the Bridgend Engine Plant. The demolition contractor (Principal Contractor) is responsible for security of the overall site and a security fence extends around the boundary of the Bridgend Engine Plant.

Arcadis will set up a temporary remediation compound to the north of the Main Assembly Building during the remediation injection works to install the IRZ. The remediation injection activities will therefore be segregated from demolition activities taking place elsewhere on site.

The proposed groundwater remediation works do not include any unsupervised operations. Injection will only be undertaken by Arcadis in working hours between 07:00 and 20:00, Monday to Friday and will always be supervised by Arcadis staff. Any issues can therefore be identified and addressed readily. Installation of the IRZ is anticipated to last for 6 weeks.

The remediation compound will be disassembled and Arcadis will demobilise on completion of the IRZ installation. The IRZ can be left in-situ without maintenance to facilitate long-term treatment of CVOC dissolved in groundwater as groundwater passes through the IRZ.

The Technically Competent Manager (TCM) will attend site during the initial stages of the remedial injections and then on a minimum of one working day per month during the installation of the IRZ via injection of EHC® into groundwater. The TCM will maintain contact with the Project Manager to advise on compliance issues, technical issues and respond to emergencies throughout the remediation activities.

Alternatively, upload a copy of this below

- File: TCM Certificates.pdf - [Download](#)

## Conceptual site model and risk assessment

Please provide a conceptual site model (CSM) which identifies all plausible pollution linkages (source-pathway-receptor relationships) and potential impacts to the local environment which could arise as a result of the proposed treatment activities.

(Further information is available in the MPP2 guidance notes)

Please see attached CSM & Risk Assessment

Alternatively, upload a copy of this below

- File: CSM & Risk Assessment.pdf - [Download](#)

## Pollution control

Please provide details of any site specific measures needed to control/minimise emissions, and prevent pollution of the environment and/or harm to human health resulting from your treatment activities (the potential risks should have been identified in your risk assessment).

During the injection of EHC® into the groundwater, the following control measures will be implemented:

- The active remediation activities (mixing / injection of EHC® mixture into groundwater) will be segregated from the remainder of the site using high visibility barriers.
- The injection points and monitoring wells will be secured to prevent unauthorised access when not required for injection / monitoring purposes.
- Daily inspections of the remediation compound and immediate surroundings will be undertaken to ensure the remediation works are not creating a nuisance or pollution risk.
- Pre-use checks of the mobile remediation plant including correct functioning of emergency stops, condition of pipework and connections will be undertaken at the start of the works. Visual inspection of plant and equipment will be undertaken daily during installation of the IRZ.
- Emissions monitoring will be completed for VOC concentrations during installation of the IRZ in line with the appended Emissions Monitoring Plan.
- If a nuisance or pollution risk resulting from the remediation injection activities is identified or raised, remediation works will temporarily cease and action taken to rectify the issue as appropriate, in discussion with the Principal Contractor.
- Dust generation during mixing of the reagent substrate with water is not anticipated however dust suppression equipment will be present on site for use if necessary.
- EHC® is a non-hazardous substance (Safety Data Sheet attached) and the manufacturer states that no special environmental precautions are needed. Throughout the injection works visual checks of equipment, hoses etc will be completed to ensure functionality and integrity and minimise the potential for reagent loss. Any vessels that contain wet EHC® will be vented due to potential pressure build up from fermentation gases. Bulk storage of the reagent (EHC®) and the mobile remediation plant such as the mixing equipment and vessels will be situated on an impermeable surface and away from drainage and open water courses.
- Unused EHC® will be stored in powdered form in plastic packaging until it is required for mixing to minimise dust generation. Mixing will be undertaken in dedicated vessels for immediate application.
- Continual site observations will be completed to monitor for accidental losses from equipment, ground mounding, ingress of reagent into nearby manhole chambers etc. If such issues occur, remediation works will cease and clean up operations completed.
- Small volume of fuels for the remediation equipment will be stored in appropriate containers on an impermeable surface. A spill kit will be present on site for use in the event of spillages.
- All equipment, unused reagent and fuel will be removed from site following completion of the remediation injection activities.

The IRZ can be left in-situ without maintenance to facilitate long-term treatment of CVOC dissolved in groundwater as groundwater passes through the IRZ.

Alternatively, upload a copy of this below

- File: SDS for EHC.pdf - [Download](#)

## Emission monitoring plans

Provide a site specific monitoring plan for any emissions that may be generated by the proposed treatment activities. Monitoring plans must include information on all of the following (when applicable to your process)

Please tick any of the below which are applicable to your process:

Groundwater

Volatile Organic Compounds

Specify the indicator parameters you propose to use for each of the emissions being monitored and provide a justification on why they are the most appropriate parameters to detect impact and prevent pollution. Depending upon your technology the plan should include both point source and wider (fugitive) emissions monitoring.

(Further information is available in the guidance)

Please see attached Emissions Monitoring Plan

Alternatively, upload a copy of this below

- File: Emissions Monitoring Plan.pdf - [Download](#)

## Record Keeping - Commissioning, operating and maintenance

Provide details of commissioning, operating and maintenance including documentation and record-keeping to ensure that emissions from the process do not cause pollution of the environment and harm to human health.

During the remediation injections to install the IRZ, a site diary will be maintained, and staff present will be documented, including site attendance by the TCM. A brief summary of activities undertaken each day will be recorded in addition to daily inspections of the remediation compound and remediation plant, details of incidents / plant breakdowns etc. The site diary will also highlight where actions are required and completed.

In accordance with the attached Emissions Monitoring Plan, baseline VOC monitoring will be undertaken prior to commencing the remediation injection activities to determine representative background conditions. Data obtained during VOC monitoring during the remediation injection works will be compared to the Trigger Level and recorded on site-specific monitoring forms.

Injection data e.g. reagent concentration, volume injected at each injection point will be logged using a mobile app designed in-house. Data access is controlled within the online platform that hosts the app. Data will also be made available to view online by the project team through the apps hosting platform, or through accessed controlled in-house created dashboards. The data will be maintained in accordance with Arcadis' quality and project management standards.

Following installation, the IRZ can be left in-situ without maintenance to facilitate long-term treatment of CVOC dissolved in groundwater as groundwater passes through the IRZ. The remediation plant (screed pump and mixing equipment) will be removed from site following installation of the IRZ.

## Payment



How do you want to pay for your application fee?

Electronic transfer (eg. BACS)

## Supporting documents

Please ensure that you include the following relevant documents with your deployment application: Site plan showing all required features Conceptual Site Model and Risk Assessment Pollution Control Monitoring Plans Record Keeping details

- File: Figures 1 - 5.pdf - [Download](#)
- File: Cover Letter MPP2 Deployment form\_Bridgend Engine Plant.pdf - [Download](#)

Please provide your payment reference

**Payment reference**    prepayment for EPR/HP3295VK

**Amount paid**            £2074.00

## Declaration

Are you signing the form on behalf of a relevant person?

If you are not a relevant person, but want to sign the application on their behalf, you must include confirmation that you can do this.

Yes

Please upload written confirmation here

- File: Letter\_of\_Authority\_NRW\_Form\_MPP2\_Bridgend\_Engine\_Plant.pdf - [Download](#)

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement: I may be prosecuted; and if convicted, I may have to pay a fine and/or go to prison. By signing below, you are confirming that you understand and agree with the declaration above.

<b>Title</b>	Ms
<b>First name</b>	Vicky
<b>Last name</b>	Roberts
<b>On behalf of (if relevant)</b>	Simon Bimpson
<b>Today's date (DD/MM/YYYY)</b>	21/11/2024

Add another signature?

No