

Environment Agency permitting decisions

Low impact installation variation

We have decided to grant the permit for Quat-Chem Limited, 4 Dodgson Street operated by Quat-Chem Limited.

The permit number is [EPR/BP3630FS](#).

The variation number is [EPR/BP3630FS/V002](#).

This variation was submitted as a normal variation but determined as a substantial variation as it involves the addition of a listed activity specified in Schedule 1 of the Environmental Permitting (England and Wales) Regulations 2010.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account.

Structure of this document

- Key issues: Containment; environmental risk assessment; Site Condition Report
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

Key issues of the decision

The proposed manufacturing process is for the production of a dilute aqueous solution of polymethacrylic acid (PMAA) solution. The reaction requires thermal activation in an aqueous medium in an oxygen depleted atmosphere. Demineralised water is used in the preparation of PMAA. The new process falls under S4.1 A1 (a)(ii) of the Environmental Permitting (England and Wales) Regulations 2010 for 'producing organic chemicals such as organic compounds containing oxygen'. Table S1.1 has been updated to reflect the additional activity.

Containment

The following table shows the types and amounts of raw materials that will be used within the new polymerisation process.

Description of Raw Material	Composition (%)	Maximum Amount (Tonnes)	Annual throughput (Tonnes/Year)	Description of the use of the raw material – including main hazards
Demineralised water	100	2	48	Make up of aqueous system Non Hazardous
4, 4 -Azobiscyanovaleric acid - Vazo 68	99	0.000440	0.01056	Initiator for polymerisation Harmful to aquatic life
Methacrylic acid solution	90	0.195	4.68	Monomer Corrosive
Ammonium Hydroxide solution	25	0.178	2.136	pH adjustment Corrosive Very toxic to aquatic environment

Safety Data sheets for methacrylic acid solution, 4,4-azobiscyanovaleric acid (Vazo) and ammonium hydroxide were submitted with the variation application. Methacrylic acid and ammonium hydroxide are ordered in 200kg quantities for on-the-day delivery and are fully consumed in the process.

All chemicals will be contained in intermediate bulk containers (IBCs) and drums within bunded warehousing. General segregation of chemical products is practiced within the warehousing. The stainless steel 5m³ reaction vessel is situated within a bund in order to contain potential spills. The bund has a capacity of greater than 110% of the reactor volume. A vacuum system is in place in the instance that a larger accidental spill should occur.

Corrosion monitoring and leak detection is carried out on tanks, valves, fittings and connections, fixed process lines, flexible hosing and pumps. Regular calibration of process temperature control thermocouples is carried out against calibrated thermometers.

Environmental risk assessment

There will be no point source emissions to air or surface water resulting from this variation. A small volume of process effluent is created from the washing out of the vessel between production batches. Washings are held within a sump while effluent pH is adjusted prior to discharge to drain. The effluent

created will be significantly below the 50m³ threshold outlined within the Environment Agency's low impact installation criteria. The polymerisation reaction will take place within a closed vessel with no point source emission to air. Fugitive emissions are limited to potential vapour release during the opening of raw material packaging.

Odour

Methacrylic acid and ammonia have pungent odours. As outlined above, vessels containing raw materials will be kept tightly seal before use and resealed tightly after use to minimise release of odour. Siphoning of raw materials from the containers to the reaction vessel will limit release of odour. The polymerisation process should not result in the release of odour as it will take place a closed system with no point source emissions to air.

Site Condition Report

The installation boundary has been updated to reflect the extent of the permitted activities to correct the reduced boundary included in the original permit. The boundary extension means that the bulk tank facility, unloading of liquid tankers, flammable store and raw material/finished product storage activities are all included within the installation. The operator confirmed that the Site Condition Report completed for the installation during the original permit application stage (reference "Site Condition Report" CL1593 (Phase one desk study) 18th January 2010) covered all the land to be incorporated into the installation.

Annex 1: decision checklist

This checklist should be read in conjunction with the Duly Making checklist, the application and supporting information and the permit/ notice.

Aspect	Justification / Detail	Criteria met
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
European directives		
Applicable directives	All applicable European directives have been considered in the determination of the application. The permit and variation have been consolidated and updated to the modern permit template which takes into account the requirements of the Industrial Emissions Directive.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary. The installation boundary has been amended to include the whole site to correct an error from the original permit where only some of the process infrastructure was incorporated. The operator has confirmed that the Site Condition Report submitted with the original application (dated 01/2010) is applicable to the whole site including the land to be added through this variation.	✓
Site condition report	The operator has provided a description of the condition of the site. See key issues section for further information. We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports – guidance and templates (H5).	✓

Aspect	Justification / Detail	Criteria met
		Yes
Biodiversity, Heritage, Landscape and Nature Conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.</p> <p>An assessment of the application and its potential to affect the sites has been carried out as part of the permitting process. There will no point source emissions to air or surface water. Minor volumes of effluent from vessel washing are released to sewer and are pH adjusted prior to discharge. We consider that the application will not affect the features of the sites.</p> <p>We have not formally consulted on the application. The decision was taken in accordance with our guidance.</p>	✓
Environmental Risk Assessment and operating techniques		
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p> <p>See key issues section for further information.</p> <p>The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant.</p>	✓
Operating techniques	<p>Condition 2.3.1 of the consolidated permit specifies that the activities shall, subject to the conditions of the permit, be operated in accordance with the Low Impact Installation criteria specified in the Environment Agency's Environmental Permitting application form at the time the permit application was duly made.</p>	✓
The permit conditions		
Updating permit conditions during consolidation	<p>We have updated previous permit conditions to those in the new generic permit template as part of permit consolidation.</p> <p>The operator has agreed that the new conditions are acceptable.</p>	✓
Operator competence		
Environment Management System	<p>There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.</p>	✓

Aspect	Justification / Detail	Criteria met
		Yes
Financial provision	There is no known reason to consider that the operator will not be financially able to comply with the standard rules. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

Annex 2: Consultation and web publicising responses

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process. (Newspaper advertising is only carried out for certain application types, in line with our guidance.)

Response received from
Rochdale Metropolitan Borough Council – Environmental Protection Department
Brief summary of issues raised
No response received
Summary of actions taken or show how this has been covered
No further action required.

Response received from
Rochdale Metropolitan Borough Council – Planning Department
Brief summary of issues raised
No response received
Summary of actions taken or show how this has been covered
No further action required.

Response received from
Health and Safety Executive
Brief summary of issues raised
No response received
Summary of actions taken or show how this has been covered
No further action required.