

Permitting decisions

Bespoke permit

We have decided to grant the permit for **Rapid Precision Engineering** operated by **Langdawe Limited**

The permit number is **EPR/AP3704BM**

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 provides a record of the decision making process. It summarises the decision making process in the decision checklist to show how all relevant factors have been taken in to account.

This decision document provides a record of the decision making process. It:

- highlights key issues in the determination
- summarises the decision making process in the decision checklist to show how all relevant factors have been taken into account
- shows how we have considered the consultation responses.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit. The introductory note summarises what the permit covers.

Key issues of the decision

General Description

Langdawe Limited is an existing surface treatment operation that is expanding to add cadmium plating facility. This expansion has led the site to become a new installation with a specific scheduled activity linked to a chemical activity 4.2 A (1) (e) based on cadmium manufacturing as follows:

“ Unless falling within any other Section, any manufacturing activity involving the use of mercury or cadmium or any compound of either element or which may result in the release into the air of either of those elements or their compounds.”

As an overview the two atmospheric emission points A1 and A2 are part of the existing operations and the emission point A3 is linked to the new cadmium plating. The effluent to sewer is solely linked to non-cadmium plating operations. The cadmium plating activities effluent is stored separately and sent off site for third party disposal. There is no effluent treatment within the installation.

1. Air Emissions

Introduction

- The Air Quality assessment was based on 71 % worst case operation of the installation which is a conservative scenario as the facility in reality will operate at a lower operation % over a year.
- The effective height for the H1 assessment is zero leading to further conservative outputs
- The H1 assessment was modified to align with our guidance for short term assessment ; convert all measured oxides of nitrogen emissions (NOx) to NO2 and assume 50 % of this value
- There are three air emissions linked to this installation
- A1 and A2 air emissions impacts are based on actual atmospheric monitoring data
- A3 new cadmium plating emissions are based on predictions. These will be confirmed via IC1 commissioning monitoring report
- This assessment is conservative with respect to stage 2 background assessments as the impacts for Chromium, PM10, Nitrogen Dioxide and Benzene are assessed with the process contributions added to the background. However in reality for these parameters the process contributions are already included in the background as stacks A1 and A2 have been operating for many years.
- Additional background data was obtained based on DEFRA screening maps information and heavy metals data from Runcorn Western Point monitoring station. For chromium VI we updated the Operator H1 assessment using the latest available data from Runcorn Western Point and the latest information on % chromium VI emissions in UK total chromium atmospheric monitoring was taken from Science Lab research dated December 2014. This concluded 5-15 % chromium VI in total chromium atmospheric data and the higher level of 15 % was used as a conservative assumption.

The operator provided a H1 assessment dated 31/08/2020. This screening conservative impact assessment is summarised below:

Screening criteria

Step 1

The emissions which warrant further investigations are as follows:

- PC long term > 1 % of the Long Term Environmental benchmark
- PC short term > 10 % of the Long Term Environmental benchmark

Stage 2

If further assessment is required the assessment continues to Stage 2. If the following criteria are met no further assessment is required. Predicted Environmental Concentration is abbreviated to PEC below.

- PEC long term (PC + Background long term air emissions levels) long term < 70 % of the Long Term Environmental benchmark

- PEC short term criteria : PC st < (20 % of Short term Environmental benchmark – 2 x background long term)

H1 assessment details:

Stage 1

Substance	Long Term EAL/EQS µg/m3	Short Term EAL/EQS µg/m3	PC LT µg/m3	PC % of LT EAL/EQS	PC LT >1% of EQS/EAL	PC ST µg/m3	PC ST % of EAL/E QS	PC ST >10% of EQS/EAL
Particulates PM10 (24hr Mean	-	50	-	-	-	22.4	44.8	Yes
Particulates PM10 (Annual Mean	40	-	0.595	4.26	Yes	-	-	-
Nitrogen Dioxide	40	200	1.60	3.99	Yes	30.1	15.1	Yes
Benzene	5	-	3.04	60.8	Yes	-	-	-
Chromium VI	0.0002	-	0.0000426	21.3	Yes	-	-	-
Chromium III	5	150	0.00798	0.160	No	0.301	0.201	No
Cadmium	0.005	-	0.000215	4.29	Yes	-	-	-

H1 Step 1 Screening Conclusion

Emissions of chromium III were screened out by the Environment Agency risk assessment tool H1, based on assumptions summarised above.

The other parameters were progressed to a Stage 2 assessment.

Stage 2

Long term assessment stage 2 details as follows:

Substance	Air Background concentration	PC LT µg/m3	PEC LT µg/m3	% PEC of EAL %	% PEC of EAL > 70 %
Particulates PM10 (Annual Mean)	14.6	0.595	15.195	38.0	No
Nitrogen Dioxide long term	21.4	1.60	23.00	57.5	No
Chromium VI	0.000219	0.0000 426	0.0002616	130.8	Yes
Cadmium	0.0000879	0.0002 15	0.0003029	6.06	No
Benzene	0.50	3.04	3.54	70.9	Yes

The long term impacts for PM10, Nitrogen Oxides and Cadmium for this installation screen out at stage 2 and therefore conclusion is no significant adverse impacts

The remaining parameters are assessed below along with a full review of other parameters via dispersion modelling as discussed below.

Dispersion Modelling

The Applicant completed dispersion modelling for those parameters that did not screen out after the H1 conservative assessment and for additional parameters as detailed below.

The report is referenced CL101_4 within their application and received 31/8/20

The parameters assessed were as follows:

- Nitrogen Dioxide
- Chromium VI
- Benzene
- PM10
- Cadmium

The modelling was carried out using ADMS modelling

The report included a review of installation process contribution impacts at seven human receptors, as listed within table 2 of the modelling report

Results

The following is a summary of the results. These are based on CL101_4 report and tables 4 to 14. The process contributions listed below are the worst process contributions for each relevant parameter at any of the relevant human receptors.

Substance	Long Term EAL/EQS µg/m3	Short Term EAL/EQS µg/m3	PC LT µg/m3	PC % of LT EAL/EQS	PC LT >1% of EQS/EAL	PC ST µg/m3	PC ST % of EAL/E QS	PC ST >10% of EQS/EAL
Particulates PM10 (24hr Mean)	-	50	-	-	-	0.21	0.42	No
Particulates PM10 (Annual Mean)	40	-	0.062	0.16	No	-	-	-
Nitrogen Dioxide	40	200	0.077	0.19	No	1.11	0.55	No
Benzene	5	-	0.32	6.45	Yes	-	-	-
Chromium VI	0.0002	-	0.00000293	1.46	Yes	-	-	-
Cadmium	0.005	-	0.00000978	0.20	No	-	-	-

Conclusion

The following parameter impacts from the installation are confirmed to be insignificant:

- Cadmium long term
- Nitrogen dioxide long and short term
- PM10 long and short term

Chromium VI further assessment

The maximum modelled long term process contribution was 0.00000293 µg/m3. It is only marginally above 1 % insignificance criteria. The EAL (Environmental Assessment Level) for Chromium VI long term is based on only emissions within the PM10 fraction.

The chromium VI monitoring are not adjusted to be those emissions within the PM10 fraction so it is likely that the process contribution is likely to be lower and in reality the process contribution will be less than 1 % long term insignificance threshold

The insignificance criteria is also likely to be complied with because of recent BAT improvements since the 2017 Stack 1 monitoring data. These improvements are as follows:

- Freeboard distance between the vat solution level and the lip extraction has been increased thus minimising the capture extraction concentration of chromium VI fumes. Now there is a 150 mm minimum free board distance.

Benzene further assessment

The maximum modelled long process contribution was 0.32 µg/m3 i.e. 6.4 % of long term EQS.

In reality it is assessed that the paint line solvent emissions will lead to insignificant benzene long term impacts for the following reasons:

- Paint line stack 2 monitoring was for Total VOCs (Volatile Organic Carbons) and not specified for Benzene. The paints contain low levels of benzene and in reality the benzene emission will be a significantly lower % than the total VOC emission.
- Operating hours -The ADMS modelling for long term impacts is based on same 71 % of annual operating hours as the conservative H1 assessment. In reality the paint shop operates much lower hours than the rest of the installation. The duly making response dated 31/08/20 confirmed on average 10 hours per month of paint activities. Even based on a conservative 200 hours per annum this is equivalent to 200/8760 i.e. 2.3 %.
This would lead to process contribution reduced pro rata to $2.3/71 * 0.32 = 0.010 \mu\text{g}/\text{m}^3$ i.e. approximately 0.2 % of the EQS

Overall Conclusion

All the installation parameters were assessed after a combination of initial H1 conservative assessment, the CL101_4 detailed modelling assessment and the further assessment reasoning detailed above to have insignificant impacts

2. Effluent discharges to sewer

The assessment is based on the Applicant H1 dated 31/08/20.

There was considerable discussion about accurate cadmium emission data as the monitoring on which the H1 was based is from 2017 before the new cadmium plating process and at a time when various reagents were used which the Operator claimed contained traces of cadmium. These reagents are no longer in use In addition the Operator confirmed in their duly making response dated 30/08/20 that the new cadmium plating effluent would not be discharged to sewer but sent off site for disposal via waste contractors.

Hence as a part of their schedule 5 response dated 01/12/20 the Operator carried out further monitoring to confirm up to date cadmium emission levels to better reflect installation emissions. The emissions had dropped from 0.07 mg/l (31/8/20 data) to < 0.02 mg/l (01/12/20).The limit of detection of monitoring was 0, 02 mg/l. The Applicant has committed to use a revised monitoring technique capable of limit of detection of 0.01 mg/l in their IC1 commissioning monitoring.

H1 basis

- Monitoring as of 31/08/20
- Average flowrate installation discharge is very low – averaged at 0.000083 m3/s.
- Ditton Brook data utilised for receiving water flowrates. The Operator has stated a conservative flowrate of 0.5 m3/s
- Based on 25 % operation per annum
- No reductions applied for Sewage Reduction Factors based on urban sewage treatment facility removal of installation emission parameters.

The results of the assessment (Test 2) are summarised below:

The screening criteria for Test 2 is based on process contributions being less than 4 % of relevant long or short term Environmental Quality Standard (EQS)

Parameter	EQS Annual Average µg/l	PC LT µg/l	PC/EQS %	>4% EQS	EQS MAC	PC ST µg/l	PC/EQS%	>4% EQS MAC
Cadmium	0.07	.0.0003	0.43	Pass	0.44	0.07		-

Chromium VI	3.4	0.0037	0.11	Pass	-	-	-	-
Chromium III	4.7	0.0037	0.08	Pass	32	.0037	0.0115	-
Nickel & compounds	4	0.0002	0.005	Pass	34	0.0002	0.000588	Pass
Lead & compounds	1.2	0.0008	0.07	Pass	14	0.0008	0.0057	Pass

Conclusion

Following a review of these results we concluded that all the parameter impacts from the installation screen out as insignificant and no further assessment needed.

Emission level benchmark compliance

The schedule 5 final monitoring data dated 01/12/20 showed that the EPR TGN 2.07 for Surface Metal Treatment benchmarks as detailed below is close to be complied with (monitoring level < 0.02 mg/l value)

- Cadmium benchmark – 0.01 mg/l

Additional operating techniques were provided in the schedule 5 response dated 15/12/20 related to controls to minimise risk of fugitive emissions of Cadmium entering the sewer discharge. In brief the residual raw material with traces of cadmium is no longer in usage and the data since 31/8/20 has been reducing from 0.07 to < 0.02 mg/l. The Operator has committed to a review of this level and if required complete renewal of all pipework where traces of cadmium could remain.

As the Cadmium emission limit value is so low and because the main activity for this installation is the Cadmium Plating an emission limit for Cadmium of 0.01 mg/l, in line with the benchmark which has been included in the permit.

As the monitoring is close to 0.01 mg/l but not yet sure if consistently at this level when cadmium plating starts an improvement program has been included for commissioning monitoring and actions to ensure compliance with this emission limit value (IC1). The improvement condition IC1 and foot note in table S3.2 of the permit allows time for improvements to effluent management to ensure compliance with 0.01 mg/l.

3. Site Condition Report

No baseline soil and groundwater reference data was submitted with the application. The Applicant Site Condition Report concluded that risk of ground water and land contamination was negligible due to

- Small scale of operations
- Limited operating hours
- No bulk tanks/large material storage volumes
- Operations taking place on first floor of the facility building

We have assessed the final site condition report dated 01/12/20. After the improvements to provide a site condition report in line with our H5 guidance we have accepted the site condition report

The Applicant understands that their decision to not include ground water and soil monitoring for baseline purposes means that the baseline is set to zero.

4. Firewater

Within the initial application, it was not fully clear the exact procedures and infrastructure to contain and manage fire water within the installation boundary in a manner to minimize risk of pollution to nearby watercourses.

The Operator provides information on controls to contain such potential fire water within their schedule 5 response dated 23/10/20

Our assessment of these measures is that the impacts of fire water pollution at the site are low for the following reasons:

- Usage of foam fire retardant as primary fire extinguisher material
- Low volumes of any fire retardant given small floor space area of the installation facility

We have therefore accepted the fire water management controls as satisfactory. Our area compliance officer will review the measures periodically with the new Operator.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential.
Consultation	
Consultation	<p>The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement.</p> <p>The application was publicised on the GOV.UK website.</p> <p>We consulted the following organisations:</p> <ul style="list-style-type: none"> • Public Health England • Director of Public Health • Health and Safety Executive • Local Authority Environmental Protection <p>The comments and our responses are summarised in the consultation section.</p>
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 our guidance on legal operator for environmental permits.
The facility	
The regulated facility	<p>We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1'.</p> <p>The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.</p>
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 including the discharge points. The plan is included in the permit.
Site condition report	The Applicant has provided a description of the condition of the site, which we consider was satisfactory. The decision was taken in accordance with our guidance on site condition reports.
Biodiversity, heritage, landscape and nature conservation	<p>The site is within the relevant distance criteria of multiple habitat sites.</p> <p>We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the</p>

Aspect considered	Decision
	<p>nature conservation screening report as part of the permitting process.</p> <p>We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified.</p> <p>The nearest European Site is approximately 8 km from the installation boundary.</p> <p>We have sent a Stage 1 Habitats Regulations Assessment (previously Appendix 11) dated 08/09/20 to Natural England for information only.</p> <p>The decision was taken in accordance with our guidance.</p>
Environmental risk assessment	
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>
Operating techniques	
General operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility except for issues addressed via four Improvement Conditions listed below</p> <p>The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p>
Operating techniques for emissions that screen out as insignificant	<p>Emissions of all parameters within the effluent emissions assessment screen out as insignificant after combination of conservative H1 assessment, modelling assessment plus additional reasoning detailed within the key issues section of this document.</p> <p>We further agree that the applicant's proposed techniques are BAT for the installation, conditional on accuracy of application emissions information.</p> <p>Additional BAT measures for the installation are provided within following documents:</p> <ul style="list-style-type: none"> • Atmospheric emissions BAT measures detailed within duly making responses dated 31/8/20. • Effluent emissions BAT measures detailed in schedule 5 response dated 23/10/20 and also 15/12/20.
Permit Conditions	
Improvement programme	<p>Based on the information on the application, we consider that we need to impose one improvement programme as follows.</p> <ul style="list-style-type: none"> • IC 1 – New facilities commissioning monitoring report
Emission limits	<p>We have decided that emission limits are required in the permit.</p> <p>ELVs have been set for the following substances.</p> <ul style="list-style-type: none"> • Effluent emissions- Cadmium emission limit value of 0.01 mg/l. This limit has been based on completion of Improvement Condition IC1
Monitoring	<p>We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.</p> <p>These monitoring requirements have been imposed in order to ensure on-going operation of</p>

Aspect considered	Decision
	<p>the installation in compliance with permit application and improvement condition report improved operating techniques</p> <p><u>The monitoring requirements are as follows:</u></p> <p>Water emissions</p> <ul style="list-style-type: none"> • Cadmium effluent monitoring– as listed in permit Table S3.2 <p>We made these decisions in accordance with the surface treatment guidance EPR 2.07</p> <p>Based on the information in the application we are fully satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate. The one exception is a review of Mcerts certification for effluent flow meter which will be addressed via compliance visit checks.</p>
Reporting	<p>We have specified reporting in the permit. We made these decisions in accordance with reporting of monitoring data discussed above plus the standard reporting requirements for this surface treatment sector</p>
Operator competence	
Management system	<p>There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.</p> <p>The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.</p>
Relevant convictions	<p>The Case Management System and National Enforcement Database have been checked to ensure that all relevant convictions have been declared.</p> <p>No relevant convictions were found. The operator satisfies the criteria in our guidance on operator competence.</p>
Growth Duty	
Section 108 Deregulation Act 2015 – Growth duty	<p>We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit.</p> <p>Paragraph 1.3 of the guidance says:</p> <p>“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”</p> <p>We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.</p> <p>We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.</p>

Consultation

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public, and the way in which we have considered these in the determination process. The consultation period ended 16/10/20. There were no responses from advertising this application on our GOV.UK website

Responses from organisations listed in the consultation section

Response received from
Public Health England. – 16/10/20
Brief summary of issues raised
Specific questions around ensuring air emissions are satisfactory
Summary of actions taken or show how this has been covered
<p>The Environment Agency has confirmed that the installation emissions are assessed as having acceptable impacts on human health This is via a detailed review of dispersion modelling and installation impacts which has concluded installation impacts are satisfactory.</p> <p>The commissioning report improvement program ICI will ensure actual emissions are in line with application estimates.</p>