Environment Agency permitting decisions

Bespoke permit

We have decided to grant the permit for St Georges Works operated by Aurelius Environmental Limited.

The permit number is EPR/FP3435RP

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
- justifies the specific conditions in the permit other than those in our generic permit template.

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

Structure of this document

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

Key issues of the decision

<u>Baseline Reporting</u>

The applicant submitted a Site Condition Report dated December 2014 but updated in mid 2015. This covered the current condition of the land (geology, hydrogeology, previous operations and incidents nearby and historic use) and the expected impact of the proposed operations.

However, there was no quantitative baseline data for soils or groundwater as would be expected under the Industrial Emission Directive unless it can be shown that there is no significant likelihood of pollution from the proposed activities.

The applicant has described how there is no significant likelihood of ground pollution because the site is fully concrete surfaced to minimum 200mm depth with a 200mm bund edge around the yard. The condition and extent of the

surfacing has been confirmed by an Environment Agency Officer visit. The historic use of the land is also believed to be housing and then light commercial warehousing (not liquids).

The applicant has also stated their intention to carry out baseline sampling within a year of the start of operations.

We therefore accept that the likelihood of ground pollution either existing or from the proposed activities is low and baseline quantitative sampling is not required. The sampling within the first year proposal is included in the permit as an improvement condition (IC1) and the template soil and groundwater monitoring condition 3.1.3 will require repeat sampling at 10 and 5 year intervals unless the operator can shown that this is not necessary based on a systematic appraisal of the risk of contamination

Discharge to Sewer

The applicant has proposed discharging all aqueous effluent to sewer. A consent to discharge is being sought from Severn Trent Water plc at the time of application. An improvement condition IC1 has been added to the permit to require the operator to submit a copy of the Consent to Discharge to sewer within one month of receipt.

However, Severn Trent have confirmed that the discharge will flow to and be treated at Ray Hall Sewage works, which has a dry weather flow of 76,000m3/day. Ray Hall sewage works uses biological sand filtration treatment before discharge to the River Tame with monitoring for Biochemical Oxygen Demand, Ammoniacal Nitrogen, Suspended Solids Iron and Flow Rate.

The applicant has proposed a maximum expected effluent volume of $5m^3$ per day with analysis of each batch for Chemical Oxygen Demand (COD), Suspended Solids (SS), Sulphate (SO4), Lead (Pb), Cadmium (Cd) and Mercury (Hg). We are satisfied that scale of the discharge, consent to discharge and monitoring of Ray Hall works discharge to the River Tame will prevent any adverse impact from COD and SS so no limits have been set for these parameters in the permit table S3.2.

The applicant submitted an H1 assessment for water impacts for Pb (Priority Substance- PS), Cd and Hg (Priority Hazardous Substances - PHS), Sulphate (Operational EQS) as well as the Specific pollutants (SP) Iron (Fe) and Zinc (Zn). These were assessed in line with our H1 Annex D1 guidance - Assessment of hazardous pollutants within surface water discharges because the first screening step is to assess a discharge to sewer as if it is directly to surface water with only sewage treatment reduction factors but not any dilution within the sewer or treatment works. We did not agree with all the quantitative assumptions used in the submitted assessment including:

- River Q95 flow was for River Tame at Minworth STW rather than at Bescot upstream of Ray Hill STW.

- Sewage Treatment reduction Factors were too optimistic at 0.1 (they should be for Filtration works taken from Annex D1 Appendix 5)
- The mean effluent discharge rate at 0.005 m^3/s should be 0.0005m^3/s based on 5m^3 over 24 hours but the maximum flow rate has been left as a reasonable 0.001 m^3/s = 1 litre/s.

However, but we do agree with the overall conclusion that under worst case assumptions all six parameters fail Test 1 as concentration >10% of the Environmental Quality Standard (EQS) but all screen out as insignificant in Test 2 as Process Contribution <4% of EQS.
We also agree that discharges of Cd and Hg are well below the significant load limits for Priority hazardous Substance.

Trade effluent via Ray Hill STW to River Tame – Q95 river flow 0.831m^3/s
Mean effluent flow rate 0.000058m^3/s
Maximum effluent flow rate 0.001m^3/s

	Pb	Cd[1]	Hg	SO4	Fe	Zn[1]
Expected Average Concn in Effluent µg/l	1000	0.05	0.01	$1.2x10^7$	1500	500
Expected Maximum Concn in Effluent µg/l	5000	0.2	0.2	$1.5x10^7$	5000	5000
Sewage Treatment Reduction Factor (Filtration)	0.8	0.5	0.44	1	1	0.57
Test 1						
Annual Average EQS µg/l	7.2[2]	0.07	0.05	$4x10^5$	1000	8
Release as % of AA EQS	13800	71.4	20	3000	150	62500
<10% of EQS	No	No	No	No	No	No
Max Allowable Concn EQS µg/l	N/A[2]	0.44	0.07	N/A	N/A	N/A
Release as % of MAC EQS		220	286			
<10% of EQS		No	No			
Test 2						
Annual Average Process Contribution µg/l	0.056	$2x10^{-6}$	$3x10^{-7}$	844.5	0.10	0.02
PC as % of AA EQS	0.78	0.0025	0.0006	0.21	0.01	0.25
<4% of EQS	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Max Process Contribution µg/l	4.81	0.0001	0.0001	18028	6.01	3.43
PC as % of MAC EQS	N/A	0.0274	0.152	N/A	N/A	N/A
<4% of EQS		**Yes**	**Yes**			
Priority Hazardous Substance – Significant Loads						
PHS Significant Load kg/year		5	1			
Annual Load		5×10^{-5}	$8 \times 10^{--6}$			
Pass/Fail		**Pass**	**Pass**			

Note 1: low water hardness

Note 2: Under the EC Priority Substances Directive 2013/39/EC (which updates the Environmental Quality Standards Directive 2008/105/EC), some of the existing EQSs will be revised from 22 December 2015 the EQS for lead changed to AA-EQS 1.2 µg/l and MAC-EQS 14 µg/l.

We do not consider discharge to sewer emission limits are needed for sulphate, iron or zinc. As there is no specific (or total metals) monitoring of

the Ray Hill outfall we consider it necessary to inmpose emission limits values for the priority or priority hazardous substances Pb, Cd and Hg.

If the revised Lead EQS (from 2015) are applied to this discharge the AA-PC becomes 4.7% of AA-EQS and the MAC-PC becomes 34.4% of MAC-EQS. To allow for these limits (and with regard to this assessment using worst case assumptions) the emission limit value for Lead in the permit has been set at 800 µg/l. The applicants proposed limits for cadmium and mercury of 0.2 µg/l are accepted.

Green Lead trial

The permit application included a request with supporting information for permission to conduct a new process development trial under Environment Agency Regulatory Position Statement (RPS) 182.

RPS 182 states:
'If we agree that the trial should go ahead, we will issue a regulatory position statement (RPS), which is specific to that trial and specifies the site or sites. The RPS will set out criteria that need to be met for the trial to take place and may include actions to be taken by the operator once the trial has ended. It will not allow anyone to carry out other trials at the same site or similar trials elsewhere.'

RPS 182 applies to both sites with and without an environmental permit so we have decided to assess this trial application as part of the permit determination process rather than issuing a separate RPS. By doing so the permission will be specific to this site and this trial only. We have set requirements for actions before and after the trial using pre-operational and improvement conditions in the permit.

The assessment followed the criteria set out in RPS 182.

- **The aim of the trial must be to recover waste.**
  The Green Lead process is intended to process waste Lead Acid batteries to produce Lead compounds and metal which are already at a grade suitable for manufacturing of Lead-acid batteries thereby eliminating the need for downstream reprocessing of Lead metal to its compounds.
- **The types and quantities of waste to be used in the trial must be clearly specified.**
  The applicant has requested a trial of up to 1,000 tonnes per annum input waste batteries (post trial enlargement to production 10,000 tpa would require a permit variation). The material inputs section of the application limits waste inputs to lead batteries under EWC code 16 06 01* but the description of the smelting pot (kettle) process also refers to secondary feedstock including soft lead products from the construction industry. Only waste inputs permitted in the current permit are allowed in the trial unless a separate risk assessment is provided as part of the pre-operational condition submission.
- **The trial must be designed to produce clear outcomes including an understanding of the benefits and any risks or potential harm that**

might result from the process. We may ask to agree the outcome in advance, and require the results of the trial to be submitted to us so we can determine what the right regulatory intervention is for the operation.
Potential benefits of the process have been outlined in the application. The pre-operational condition submission must include a description of the as-built equipment design and layout and an assessment of potential impacts from the trial, both to environmental and human receptors, and details of measures to prevent or control them. The collected data will be needed in any permit variation application for a larger trial or full scale operation. Trial data relating directly to environmental impacts must be submitted to the Environment Agency under improvement condition IC2.

- **There must be a realistic prospect that the trial will lead to a process that can be adopted more widely and that the trial will not be a one-off exercise.**
  The process has already been developed through smaller trials. This is intended to be a full pilot trial of the industrial process that will lead to a larger process on site and licensing elsewhere in the world.
- **There must be a scientific need to demonstrate that the proposed process works which cannot be met using information that can reasonably be sourced elsewhere (e.g. from previous trials, experience in other countries or a literature search).**
  Process design data is already known. This trial is intended to pilot the process at an industrial scale to gather data on process variables such as energy and raw material use, adequacy of process control and environmental emissions and methods of monitoring.
- **The trial must have a start and end date and will not normally continue for more than six months.**
  The applicant has confirmed 6 months should be a sufficient trial time.
- **There must be a clear plan for dealing with any residual waste or infrastructure on the site at the end of the trial to ensure these will not be abandoned.**
  Plans for residual waste have been outlined in the application. These and the fate of the infrastructure must also be confirmed in the report submitted under improvement condition IC2 at the end of the trial.
- **The trial will not distort the market while it is being carried out.**
  The 1000tpa limit on the trial will ensure the market is not significantly distorted.
- **It would be disproportionate for the operator to obtain or vary a permit for the trial.**
  The process is novel so the trial is necessary to yield the data needed for a permit variation.
- **The requirements of relevant guidance such as How to comply with your environmental permit or Guidance for the recovery and disposal of waste SGN 5.06 are met.**
  The guidance requirements are addressed in the application.
- **The trial meets the relevant objectives of the Waste Framework Directive;**
  '… ensuring that waste management is carried out without endangering human health, without harming the environment and

in particular:
(i) without risk to water, air, soil, plants or animals;
(ii) without causing a nuisance through noise or odours; and
(iii) without adversely affecting the countryside or places of special.
The pre-operational condition submission must include a description of the as-built equipment design and layout and an assessment of potential impacts from the trial, both to people and the environment, and details of measures to prevent or control them.

- **Where the operation is covered by the Schedule 1 of the EPR, you must also demonstrate that the proposal would represent Best Available Technique, the efficient use of energy and water and no additional significant risk of accidents.**
  The BAT in the general guidance requirements are addressed in the application. The trial pre-operational condition submission must include an assessment of the risk of accidents from the trial and will be designed to yield information about energy and water use for any permit variation for a larger trial or full scale operation.

Annex 1: decision checklist
This document should be read in conjunction with the application and supporting information and permit/ notice.

Aspect considered	Justification / Detail	Criteria met Yes
Receipt of submission		
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. The decision was taken in accordance with our guidance on commercial confidentiality.	✓
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.	✓
Responses to consultation, and web publicising	The consultation responses (Annex 2) were taken into account in the decision. There were no responses to web publicising. The decision was taken in accordance with our guidance.	✓
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 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 discharge points . A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓

Aspect considered	Justification / Detail	Criteria met Yes
Site condition report	The operator has provided a description of the condition of the site. We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED– guidance and templates (H5). See Key Issues and Improvement Condition sections.	✓
Biodiversity, Heritage, Landscape and Nature Conservation	On receipt the application was originally classed as a waste operation and screened as such identifying two local wildlife sites. When the application was reassigned as a bespoke installation the screening was rerun with a much larger search area. The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat . Fen Pools Special Area of Conservation (cited as a SAC for great crested newt) – 5.4km Wren's Nest Site of Special Scientific Interest (cited as a SSSI for geological features) – 1.8km Fens Pools is also a SSSI but this is outside the 2km screening distance. A full assessment of the application and its potential to affect the sites and species has been carried out as part of the permitting process. We consider that the application will not affect the great crested newt population or geological features. This conclusion is based on: • The operation is relatively small. • The proposed operation (not including the new process trial) does not have any point source emissions to air or surface water. • Fugitive emissions from battery dismantling are within a building and abated by a filtration unit. • The distance to the habitat sites means a significant impact from the proposed activities is very unlikely. An Appendix 4 form for information only was completed and filed internally. An Appendix 11 form was sent to Natural England for	✓

Aspect considered	Justification / Detail	Criteria met Yes
	information only. We have not formally consulted on the application. The decision was taken in accordance with our guidance. One National Nature Reserve (Wren's Nest 1.8km), one Local Nature Reserve (Wren's Nest 1.5km) and twenty five Local Wildlife Sites (nearest are Dudley to Priestfield Disused Railway 90m and Princes End Disused Railway 190m) were also identified. We consider the application will not affect the features of these sites based on the same reasoning as for the SAC and SSSI above.	
Environmental Risk Assessment and operating techniques		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant.	✓
Operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The applicant submitted a policy procedure document (reference WMP03a) which outlined compliance procedures for meeting the guidance in S5.06 and 'How to comply with your Environmental Permit'. Key points explanatory text about limits on operating techniques has also been included in the Activities table S1.1 for clarity. The proposed techniques for priorities for control are in line with the benchmark levels contained in the TGN and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs and BAT Conclusions.	✓
The permit conditions		
Use of conditions other than those from the template	Based on the information in the application, we consider that we do not need to impose conditions other than those in our permit template, which was developed in consultation with industry having regard to the relevant legislation.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
Raw materials	The raw materials and annual throughput estimates listed in the application are hydrated lime for acid neutralisation (250tpa) ; gas oil (diesel) for mobile plant (12,000 litres pa); and engine/hydraulic oils for plant and equipment (1,000 litres pa). We have not included specification limits for raw materials.	✓
Waste types	We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility. These are the same as the 8 waste codes submitted in the application (ref B3 WMP01b) We are satisfied that the operator can accept these wastes because they are all related to the proposed operations of acceptance of batteries and electrolyte, sorting of all non lead acid batteries for repackaging and onward transfer, processing of lead acid batteries as detailed in the non-technical summary and Treatment summary (B3 WMP App 5.5).	✓
Pre-operational conditions	Based on the information in the application, we consider that we need to impose pre-operational conditions. We have included a pre-operational condition in relation to the proposed development trial of the Green Lead process to require the submission for Environment Agency approval of a commissioning and trial conduct plan. This should cover a consideration of potential impacts (including accidental) on the environment of the trial and the monitoring of parameters to control the process during the trial and gather the information required for a full production process. See Key Issues	✓
Improvement conditions	Based on the information on the application, we consider that we need to impose improvement conditions. We have included improvement conditions to: 1. Require the submission of a copy of the consent to discharge to sewer, once issued, from Severn Trent Water plc. 2. Require baseline quantitative sampling of soil and groundwater under the site within the first year of operation.	✓

Aspect considered	Justification / Detail	Criteria met Yes
	3. Require the submission of a post trial report of the Green Lead process for Environment agency approval. This should cover a quantification of potential impacts (including accidental) on the environment of the optimised process and the monitoring of parameters to control the full production process.	
Incorporating the application	We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process. These descriptions are specified in the Operating Techniques table in the permit.	✓
Emission limits	We have decided that emission limits should be set for the parameters listed in the permit. There are no point source emissions to air, surface water or land (excluding emission to air proposed in the Green Lead development trial). There is one discharge to sewer, S1 (Severn Trent Water plc) for which an improvement condition has been set to submit a copy of the consent when received. See Key Issues above. Emission Limit Values have been set for lead, cadmium and mercury concentration for each batch prior to discharge to sewer. It is considered that the emission limit values and monitoring described above will ensure that significant pollution of the environment is prevented and a high level of protection for the environment secured.	✓
Monitoring	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. In addition to the parameters with emission limit values above we have also required monitoring of the discharge to sewer for Chemical Oxygen demand, Sulphate, Suspended Solids (for which the applicant proposed limits but we consider they are adequately controlled by meeting the sewer discharge consent), Biological Oxygen Demand and totalised batch flow volumes	✓

Aspect considered	Justification / Detail	Criteria met Yes
	relevant specific pollutants with EQSs Copper, Nickel, Zinc, those with operational EQSs pH, Silver, Tin and Chromium. and Antimony which does not have an Environmental Quality Standard but is mentioned in the application as a known contaminant of battery acid.	
Reporting	We have specified reporting in the permit. The operations are not expected to adversely affect the sewage treatment works so reporting is set at annually.	✓
Operator Competence		
Environment management system	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.	✓
Technical competence	Technical competency is required for activities permitted. A Wamitab Continuing Competence Certificate for Mr M Freeman valid to 02/04/16 for transfer and treatment of hazardous waste was submitted. This is acceptable. A letter of application for WAMITAB certificate training for Mr J Harris for transfer and treatment of hazardous waste was also submitted.	✓
Relevant convictions	The National Enforcement Database has been checked to ensure that all relevant convictions have been declared. No relevant convictions were found. The operator satisfies the criteria in RGN 5 on Operator Competence.	✓
Financial provision	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

Annex 2: Consultation

Summary of responses to consultation and the way in which we have taken these into account in the determination process.
There were no responses to the web publicising of the application.

Response received from
Sandwell Metropolitan Borough Council – Department of Environmental Health
Brief summary of issues raised
Found no complaints, evidence of issues or enforcement actions relating to the site. Noted the avoidance of smelting activities but queried what conditions/limits will be attached to stack emissions monitoring for NO_2/NO_x and particulates.
Summary of actions taken or show how this has been covered
The proposed permitted operation in the application does not have any point source emissions to air only abated fugitive emissions from battery dismantling within a building . This will be controlled by permit conditions in sections 3.1 and 3.2 of the permit. The references to stack monitoring refer to the development trial of the Green Lead process where there will be some smelting (it only intends to avoid high energy smelting). Pre-operational and improvement conditions for pre and post trial report submissions to the Environment Agency for approval will control the impact on the environment during the trial whilst generating the data needed to assess controls/emission limits on any full operation.

Response received from
Public Health England – Centre for Radiation, Chemical and Environmental Hazards
Brief summary of issues raised
The applicant should take all appropriate measures to prevent or control pollution, in accordance with the relevant sector technical guidance or industry best practice – especially with regard to fugitive emissions and noise.
Summary of actions taken or show how this has been covered
The proposed installation is not expected to have a significant environmental impact from fugitive emissions or noise so adequate controls is achieved through the permit conditions in sections 3.2 and 3.4.

Response received from
Health and Safety Executive
Brief summary of issues raised
No comments on the proposals.
Summary of actions taken or show how this has been covered
None required.