

# Notice of variation and consolidation with introductory note

**The Environmental Permitting (England & Wales) Regulations 2016**

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Johnson Matthey PLC

Chilton Manufacturing Area  
Johnson Matthey  
Belasis Avenue  
Billingham  
Cleveland  
TS23 1LH

**Variation application number**

EPR/KP3536UC/V005

**Permit number**

EPR/KP3536UC

# Chilton Manufacturing Area

## Permit number EPR/KP3536UC

### Introductory note

#### **This introductory note does not form a part of the notice**

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. Only the variations specified in schedule 1 are subject to a right of appeal.

This variation is to permit:

- An increase in the capacity of activities AR2 and AR4 to 60 tpa each with additional plant and buildings to facilitate this;
- Relocation of some ovens / kilns within the site into a new extension to the existing building area – used for activity AR1;
- Extension of the Installation boundary to accommodate the new buildings for activities AR1 and AR2;
- Addition of a Section 4.2 Part A(1) (a) (iv) activity for producing inorganic chemicals (AR5) for Metals Dissolving, in a new building located within the existing drum store area;
- Extension of the Installation boundary of the drum park;
- Additions to permitted range of raw materials for activities AR1, AR2 and AR4;
- Additional emission points to air;
- Addition of another Reverse Osmosis unit, to support the metal dissolving;
- Integration into the permit of previously agreed changes to oxides of nitrogen and particulates monitoring.

Minor alterations to permit wording have also been made to correct identified inaccuracies including an update to the site name and address (including postcode).

#### **Brief Description of the process**

The Chilton Manufacturing Area installation (formerly Manufacturing Science Centre) is located on the 'Chilton' site in Billingham, Cleveland. Within the Chilton Manufacturing Area the operator undertakes research and development activities, as well as the manufacture of a small range of speciality and high performance materials in processes that involve batch (non-continuous) and short-campaign continuous production. The research activities, aimed to enable the scale up of new products and new manufacturing processes, are beyond the remit of the Environmental Permitting Regulations.

The installation operates three existing separate process lines with the same listed activity, S4.2 A1(a)(v).

AR1 produces metal oxide catalysts, either by precipitation in an acid-base reaction medium or by impregnation of the metal salt onto a support material, to produce an intermediate which is then heated to produce the required catalyst. Typical production is up to 10 tonnes per year.

The principal processing activities covered are weighing, blending of solutions, precipitation, impregnation, intermediate storage / ageing, solid-liquid separation, drying, calcining / high temperature heating, sizing - milling or granulation, sieving, formation of tablets, blending and paste formation and packing of metal oxide catalysts.

AR2 and AR4 produce metal oxides for other uses. The production capacity for each activity is up to 60 tonnes per year, based upon similar process chemistry as AR1. These process lines extend the range of

inorganic chemical products that can be commercially produced within the installation. These chemical products are based mostly on salts of alkali metals, alkaline earth metals and transition metals.

Potential emissions to air from the installation consist of nitrogen oxides and dust associated with the drying operations, ovens, kilns, calcination process and handling of powder raw materials. Dust emissions are minimised at the source or abated through high efficiency filtration equipment (HEPA filters) which are considered to be BAT for the sector. Ammonia emissions can also be generated in the processes. In the AR4 process these are removed via a wet chemical scrubber, prior to venting to atmosphere via an external stack. This results in the generation of liquid effluents that are collected in a dedicated effluent tank and removed from site by road tanker.

AR5 is a S4.2 A1(a)(iv) listed activity metal dissolving process to process metals and metal salts to generate high quality metal salt solutions. Techniques employed include grinding of metal briquettes; handling of metal powders, metal salt powders and metal salt solutions; dissolution and sulphuric/sulphurous acid leaching; oxidative precipitation and solids separation; solvent extraction and ion exchange.

AR4 and AR5 processes are each supported by a reverse osmosis unit to purify input water. The emissions to the private drainage system operated by Fujifilm (emission point W1) are associated with surface water run-off from external areas, uncontaminated cooling water and reverse osmosis unit retentate. The Fujifilm drainage system is connected downstream to the C F Fertilisers effluent handling system, from where a combined effluent is ultimately discharged to the River Tees under an environmental permit held by C F Fertilisers UK Limited. All liquid effluents associated with processing within the installation are collected and removed from the site by a licensed waste disposal contractor for off-site disposal.

The installation lies within relevant screening distance of 10 km from the Teesmouth and Cleveland Coast Special Protection Area and Ramsar sites that are protected under Conservation of Habitats and Species Regulations 2017. There are also non-statutory ecological sites protected under the Environment Act, within the relevant screening distance of 2 km.

The site operates according to an environmental management system certified to ISO14001:2015 standard and has procedures relating to environmental management and sustainability under Johnson Matthey's group corporate sustainability programme.

The schedules specify the changes made to the permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application KP3536UC	Duly made 01/02/08	
Additional information received	01/09/08	
Permit determined KP3536UC	08/05/09	Permit issued to Johnson Matthey PLC
Application EPR/KP3536UC/V002 (variation)	Duly made 18/09/14	Application to vary the permit to include a new pilot scale pan coater.
Variation determined EPR/KP3536UC/V002	13/10/14	Varied permit issued.
Application EPR/KP3536UC/V003 (variation and consolidation)	Duly made 20/04/18	Application to vary the permit to include a new process line for production of other metal oxide inorganic compounds for use other than as catalysts.
Schedule 5 Notice issued 19/06/2018	16/08/18	Additional information received.
Schedule 5 Notice issued	07/09/18	Additional information received.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
30/08/2018		
Variation determined EPR/KP3536UC/V003	16/10/18	Varied and consolidated permit issued.
Application EPR/KP3536UC/V004 (variation and consolidation)	Duly made 27/11/18	Application to vary the permit to include a new process line for production of other metal oxide inorganic compounds for use other than as catalysts and site boundary extension.
Schedule 5 Notice issued 08/03/2019	08/03/19	Additional information received.
Variation determined EPR/KP3536UC/V004	01/05/19	Varied permit issued.
Application EPR/KP3536UC/V005 (variation and consolidation)	Duly made 18/10/21	Application to vary the permit to increase the volume and range of existing production capacity, add a new metal dissolving activity with associated reverse osmosis water treatment, add and move emission points to air, and extend the installation boundary.
Schedule 5 notice issued 02/12/21	10/12/2021	Additional information received.
Request for Further Information dated 10/12/21	16/12/21	Clarification of Schedule 5 response and reply to additional questions.
Variation determined EPR/KP3536UC/V005 (Billing ref. PP3603MS)	19/01/22	Varied and consolidated permit issued.

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

### Permit number

EPR/KP3536UC

### Issued to

**Johnson Matthey PLC** (“the operator”)

whose registered office is

**5th Floor  
25 Farringdon Street  
London  
EC4A 4AB**

company registration number 00033774

to operate a regulated facility at

**Chilton Manufacturing Area  
Johnson Matthey  
Belasis Avenue  
Billingham  
Cleveland  
TS23 1LH**

to the extent set out in the schedules.

The notice shall take effect from 19/01/2022

<b>Name</b>	<b>Date</b>
<b>Philip Lamb</b>	<b>19/01/2022</b>

Authorised on behalf of the Environment Agency

## Schedule 1

Only the following conditions have been varied by the consolidated permit EPR/KP3536UC/V005.

The following conditions were varied as a result of an Environment Agency initiated variation to reflect modern template wording:

Notification condition 4.3.2

Schedule 5 Notification Template sections c) and d)

The following conditions were varied as a result of the application made by the operator:

Table S1.1 Activities referenced by condition 2.1.1 is amended to include new activity AR5, to update descriptions and limitations for activities A2, A3 and A4 and to remove the discharge of effluent from the AR3 effluent handling description.

Table S1.2 Operating techniques referenced by condition 2.3.1 is amended to include the relevant parts of the application documents and response to the Schedule 5 request for further information.

Table S1.3 Improvement programme requirements referenced by condition 2.4.1 is amended to include a new improvement condition IC4.

Table S2.1 Raw Materials, referenced by condition 2.3.3, is amended to include the extended range of material for the existing processes and the new AR5 process.

Table S3.1 Point source emissions to air referenced by condition 3.1.1 is amended to include new emissions points A13-A19 and to add hydrogen fluoride monitoring for A1-A3. Amendments also made to monitoring of oxides of nitrogen. Monitoring of particulates is deleted.

Table S3.2 Point Source emissions to water referenced by condition 3.1.1 is amended to include an emission point W2 from the AR5 process and drum storage area.

Table S3.3 Process monitoring requirements referenced by condition 3.5.1 is amended to include the same NOx theoretical emissions profiling for emission points A13-A15, and A16 as for A1-A3 and A9-A11.

Table S4.1 Reporting of monitoring data referenced by condition 4.2.3 is amended to include reporting of monitoring of A13-A15 and A16

Table S4.2 Annual Production/treatment referenced by condition 4.2.2 is amended to include the quantity of metal salt solutions produced by activity AR5.

Table S4.3 Performance parameters referenced by condition 4.2.2 is amended to include the total metal raw materials used in activity AR5.

Schedule 7 Site plans, referenced by condition 2.2.1, are updated for the extended installation boundary and changes to emissions points.

The following conditions were added as a result of the application made by the operator:

Table 1.4 Pre-operational measures for future development and related condition 2.5.1 have been added to require submission of further design and operational details for approval before commissioning of Activity AR5.

### Additional changes

The site name and address (including postcode) have also been updated at the request of the operator. There is no change in legal operator so this is not a permit transfer.

The Permit Introductory Note has been updated to reflect current activities.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2016

### Permit number

**EPR/KP3536UC**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/KP3536UC/V005 authorising,

**Johnson Matthey PLC** (“the operator”),

whose registered office is

**5th Floor**

**25 Farringdon Street**

**London**

**EC4A 4AB**

company registration number 00033774

to operate an installation at

**Chilton Manufacturing Area**

**Johnson Matthey**

**Belasis Avenue**

**Billingham**

**Cleveland**

**TS23 1LH**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Philip Lamb	19/01/2022

Authorised on behalf of the Environment Agency



# Conditions

## 1 Management

### 1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
  - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

### 1.2 Energy efficiency

- 1.2.1 The operator shall:
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
  - (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
  - (c) take any further appropriate measures identified by a review.

### 1.3 Efficient use of raw materials

- 1.3.1 The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
  - (b) maintain records of raw materials and water used in the activities;
  - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
  - (d) take any further appropriate measures identified by a review.

### 1.4 Avoidance, recovery and disposal of wastes produced by the activities

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
  - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
  - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

### **2.2 The site**

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plans at schedule 7 to this permit.

### **2.3 Operating techniques**

- 2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
  - (b) the composition of the waste;
  - (c) the handling requirements of the waste;
  - (d) the hazardous property associated with the waste, if applicable; and
  - (e) the waste code of the waste.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

### **2.4 Improvement programme**

- 2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

### **2.5 Pre-operational conditions**

- 2.5.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.

### **3 Emissions and monitoring**

#### **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

#### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

#### **3.3 Odour**

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
  - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

#### **3.4 Noise and vibration**

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

## **3.5 Monitoring**

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

- (a) point source emissions specified in tables S3.1 and S3.2;
- (b) process monitoring specified in table S3.3;

3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.

## **4 Information**

### **4.1 Records**

4.1.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
  - (i) off-site environmental effects; and
  - (ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

### **4.2 Reporting**

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
  - (b) the annual production /treatment data set out in schedule 4 table S4.2; and
  - (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
  - (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4 ; and
  - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.
- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

## 4.3 Notifications

- 4.3.1 In the event:
- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
    - (i) inform the Environment Agency,
    - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
    - (iii) take the measures necessary to prevent further possible incidents or accidents;
  - (b) of a breach of any permit condition the operator must immediately—
    - (i) inform the Environment Agency, and
    - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
  - (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

## **4.4 Interpretation**

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

# Schedule 1 – Operations

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
AR1	S4.2 A1 (a) (v)	Producing metal oxide catalysts.	From receipt and handling of raw materials to dispatch of final products, including handling of wastes. Metal salts raw materials are specified in Table S2.1.
AR2	S4.2 A1 (a) (v)	Producing metal oxides for other uses.	From receipt and handling of raw materials to dispatch of final products, including handling of wastes. Metal salts raw materials are specified in Table S2.1. The total amount of product will not exceed 60 tonnes/year.
AR4	S4.2 A1 (a) (v)	Producing metal oxides for other uses.	From receipt and handling of raw materials to dispatch of final products, including handling of wastes and input water purification reverse osmosis unit. Metal salts raw materials are specified in Table S2.1. The total amount of product will not exceed 60 tonnes/year.
AR5	S4.2 A1 (a) (iv)	Metal dissolving process to process metals and metal salts to generate high quality metal salt solutions.	From receipt and handling of raw materials to dispatch of final products, including handling of wastes and input water purification reverse osmosis unit. Metal salts raw materials are specified in Table S2.1 The total amount of metal salt solution will not exceed 1800 tonnes/year.
<b>Directly Associated Activity</b>			
AR3	Effluent handling, storage and discharge to Fujifilm drainage system.	Sampling, analysis, settling, filtration, decanting and discharge of uncontaminated surface runoff and reverse osmosis unit retentate.	From collection of the effluent to its discharge to drainage system or disposal off-site as a waste, based on assessment of its physico-chemical properties.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	Sections 3.2, 4, 6, 7, 10, 11, 12, 13, 14, 15 and 16 of the application document titled 'Application to Vary an	13/04/18

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
	Environmental Permit' provided in response to section 3 – 'Operating Techniques', Part C3 of the application form for variation EPR/KP3536/V003, as amended by subsequent responses to Schedule 5 Notices listed below.	
Response to Schedule 5 Notice dated 19/06/18	Section 2, 4, 5, 6, 7, 8, 9, 10, Appendix A, B, C of 'Response to Schedule V Notification' document, dated 14/08/18, providing additional information on the operating techniques of the installation.	16/08/18
Response to Schedule 5 Notice dated 30/08/18	Document titled 'Response to Schedule V Notification – Addendum 1', dated 06/09/2018, providing additional information on air emissions of speciated metals (Beryllium and Vanadium) in particulate matter.	07/09/18
Application	Sections 3.2, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, and appendix D of the application document titled 'Application to Vary an Environmental Permit – Variation 04' provided in response to section 3 – 'Operating Techniques', Part C3 of the application.	Duly Made 27/11/18
Response to Schedule 5 Notice dated 08/03/19	Additional details provided via email regarding the proposed activity and process flow diagram.	08/03/19
Review email	Additional details provided via email regarding the proposed effluent discharge point W1 - email point 2.	11/04/19
Application EPR/KP3536UC/V005	Supporting Documentation – Application For Variation of Environmental Permit EPR/KP3536UC Variation V005 AECOM 60646890-LE-RP-001 dated 18 March 2021 including: Appendix B Qualitative Environmental Risk Assessment Appendix C Air Quality Impact Assessment Appendix D BAT Assessment in Support of Permit Variation V005	Duly Made 18/10/21
Schedule 5 notice dated 02/12/21	Responses to Questions: 3 – Emissions points from AR1 batch ovens 8 – Acids to be used in AR5 process 10 – Clarification Reverse osmosis units serve AR4 and AR5	10/12/21
Request for further information dated 10/12/21	Clarification that process washing are no longer sent to drain. Proposed restriction on use of Antimony Clarification of use of ammonium salts in AR1 process	16/12/21

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC 1	The operator shall develop a detailed monitoring programme that includes either MCERTS certification or MCERTS accreditation (as appropriate), for the monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring requirements specified in condition 3.5.1.  A report confirming successful completion of this improvement condition and detailing the monitoring programme shall be submitted to the Environment Agency for review and approval.	Complete
IC2	During commissioning of the activities permitted under variation V004, the Operator shall carry out a monitoring exercise to validate the predicted	Complete



<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
	<p>ammonia emission rate from emission point A12 used in the H1 assessment submitted with the variation application (dated 27/11/18).</p> <p>Following completion of the monitoring exercise, the Operator shall submit a report to the Environment Agency for approval, detailing the findings of the monitoring exercise and if appropriate any improvements to the proposed abatement technology.</p>	
IC3	<p>During commissioning of the activities permitted under variation V004, the Operator shall carry out a noise monitoring exercise paying specific focus to the new commission scrubber.</p> <p>Following completion of the monitoring exercise, the Operator shall submit the results to the Environment Agency, detailing the findings of the monitoring exercise and if appropriate any improvements to the proposed abatement technology.</p>	Complete
IC4	<p>The operator shall submit a report to the Environment Agency on the commissioning of Phase 1 of the metal dissolving process AR5. The report shall include, but not be limited to:</p> <ul style="list-style-type: none"> <li>• Comparison of the actual optimised operation with that expected and reported in the pre-commissioning report, identifying any changes to plant or operational techniques.</li> <li>• Comparisons of actual point source (A17-A19) emissions to air with those predicted and submitted in the V005 application supporting documentation Appendix D.</li> <li>• Confirmation that the noise attenuation measures for the AR5 compressors and briquette grinding area are working as effectively as expected to prevent unacceptable noise at nearby human receptors.</li> </ul>	Within 3 months of the start of process chemical commissioning of AR5 or otherwise as agreed in writing with the Environment Agency

<b>Table S1.4 Pre-operational measures for future development</b>		
<b>Reference</b>	<b>Operation</b>	<b>Pre-operational measures</b>
PO 1	Metal Dissolving Plant (activity AR5)	<p>At least 4 weeks before the start of process chemical commissioning of the metal dissolving plant the operator shall submit a report to the Environment Agency for approval including, but not limited to:</p> <ul style="list-style-type: none"> <li>• Relevant parts of EPR/KP3536UC/V005 application supporting document section 3.7, updated appropriately, to describe the finalised process, liquid and solid storage and tanker offloading/loading facilities</li> <li>• Results from baseline sampling of ground contamination for the area of installation boundary extension associated with new activity AR5 and an updated site condition report.</li> <li>• Details of constructed tanks and bunding associated with activity AR5 with dimensions and volumes showing bunds comply with guidance of 110% of largest tank and 25% of total volume.</li> <li>• Confirmation that containment measures meet CIRIA C736 construction guidance.</li> <li>• An updated site plan detail showing the location of AR5 associated buildings and tanker facilities as well as emission point W2.</li> <li>• Size and flow data for the AR5 process vent scrubber(s).</li> <li>• A summary of AR5 HAZOP (or similar assessment) conclusions.</li> </ul>

<b>Table S1.4 Pre-operational measures for future development</b>		
<b>Reference</b>	<b>Operation</b>	<b>Pre-operational measures</b>
		<ul style="list-style-type: none"> <li>• A summary of the AR5 control system, particularly where this relates to the potential for releases to the environment.</li> <li>• Details of the AR5 closed cleaning and rinsing system.</li> <li>• Details of the containment and attenuation measures for the briquette grinding area.</li> <li>• A commissioning plan showing how the environment will be protected during the other than normal operating conditions of commissioning and detailing any monitoring required to demonstrate that the process is operating as designed with regard to emissions.</li> </ul> <p>Process chemical commissioning may not begin until written approval has been received from the Environment Agency.</p>

## Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials	
Raw materials description	Specification
Metal salts raw materials for metal oxide catalysts production (activity AR1)	Permitted metal salts raw materials are: Aluminium, Tin, Silicon, alkali metals (Lithium, Sodium, Potassium, Caesium), alkaline earth metals (Beryllium, Magnesium, Calcium, Barium), transition metals (Titanium, Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Yttrium, Zirconium, Molybdenum, Tungsten), platinum group metals (Ruthenium, Rhodium, Palladium, Rhenium, Platinum), noble metals (Gold, Silver), rare earth metals (Lanthanum, Cerium) as a nitrate, chloride, phosphate, hydroxide, oxide, carbonate, fluoride or as a salt of an organic acid (acetate, citrate, oxalate). Quaternary Ammonium salts as structure directing agents/templates.
	Use of raw materials containing Beryllium shall be limited to manufacturing of maximum 100 kilograms per year of metal oxides catalysts containing Beryllium with a maximum concentration of 1% weight of oxide catalyst products, equating to a maximum annual usage of less than 1 kg/year of Beryllium within this activity.
	Use of raw materials containing Vanadium shall be limited to manufacturing of maximum 100 kilograms per year of metal oxides catalysts containing Vanadium with a maximum concentration of 35% weight of oxide catalyst products, equating to a maximum annual usage of less than 35 kg/year of Vanadium within this activity.
Metal salts raw materials for production of metal oxides for other uses (activity AR2)	Permitted metal salts raw materials are: Boron, Aluminium, Antimony, Tin, alkali metals (Lithium, Sodium, Potassium, Caesium), alkaline earth metals (Magnesium, Calcium), transition metals (Titanium, Vanadium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Zirconium, Niobium, Molybdenum, Tungsten) and rare earth metal Cerium, as a nitrate, chloride, phosphate, hydroxide, oxide, carbonate or as a salt of an organic acid (acetate, citrate, oxalate).
	Use of raw materials containing Vanadium shall be limited to manufacturing of maximum 10,000 kilograms per year of metal oxides containing Vanadium with a maximum concentration of 5% weight of the oxide catalyst products, equating to a maximum annual usage of less than 500 kg/year of Vanadium within this activity.
	Use of raw materials containing antimony shall be limited to manufacturing a maximum of 60,000 kilograms per year of metal oxides containing antimony with a maximum concentration of 1.5% weight of the oxide products, equating to a maximum annual usage of less than 900 kg/year of antimony within this activity.
Metal salts raw materials for producing metal oxides for other uses (activity AR4)	Permitted metal salts raw materials are: Boron, Aluminium, Antimony, Tin, alkali metals (Lithium, Sodium, Potassium and Caesium), alkaline earth metals (Magnesium and Calcium), transition metals (Titanium, Vanadium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Zirconium, Niobium, Molybdenum, Tungsten) and rare earth metal Cerium as a sulphate, nitrate, chloride, phosphate, hydroxide, oxide, carbonate or as a salt of an organic acid (such as acetate, citrate, oxalate).
	Use of raw materials containing Vanadium shall be limited to manufacturing of maximum 10,000 kilograms per year of metal oxides containing Vanadium with a maximum concentration of 5% weight of the oxide catalyst products, equating to a maximum annual usage of less than 500 kg/year of Vanadium within this activity.
	Use of raw materials containing antimony shall be limited to manufacturing a maximum of 60,000 kilograms per year of metal oxides containing antimony with a maximum concentration of 1.5% weight of the oxide products, equating to a maximum annual usage of less than 900 kg/year of antimony within this activity.

<b>Table S2.1 Raw materials</b>	
<b>Raw materials description</b>	<b>Specification</b>
Metals and metals salts for metal dissolving and purification (activity AR5)	<p>Permitted metal salt raw materials are:            Boron, Aluminium, Antimony, Tin, alkali metals (Lithium, Sodium, Potassium and Caesium), alkaline earth metals (Magnesium and Calcium), transition metals (Titanium, Vanadium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Zirconium, Niobium, Molybdenum, Tungsten) and rare earth metal Cerium as a sulphate, nitrate, chloride, phosphate, hydroxide, oxide, carbonate or as a salt of an organic acid (such as acetate, citrate, oxalate).</p> <p>Permitted metal raw materials, as metal powders or briquettes are:            Cobalt, Nickel</p>

## Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 [Point A1 on emission point plan in Schedule 7]	Common vent header from continuous drier and main ovens (activity AR1) [Note 3]	Hydrogen Fluoride	5 mg/m <sup>3</sup>	Hourly	Every six months [Note 2]	CEN TS 17340 or CEN TS 17337
A2 [Point A2 on emission point plan in Schedule 7]		Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	120 mg/m <sup>3</sup> [Note 1]	Maximum in reporting period	Annual	By calculation as agreed in writing with the Environment Agency
A3 [Point A3 on emission point plan in Schedule 7]						
A4 [Point A4 on emission point plan in Schedule 7]	Small scale R&D use only	No parameters set	-	-	-	-
A5 [Point A5 on emission point plan in Schedule 7]	Small scale R&D use only	No parameters set	-	--	--	--
A6 [Point A6 on emission point plan in Schedule 7]	Forming machine (activity AR1)	No parameters set	-	--	--	--
A7 [Point A4 on emission point plan in Schedule 7]	Small scale R&D use only	No parameters set	-	--	--	--
A8 [Point A8 on emission sources plan in Schedule 7]	Pan coater (drying oven) (activity AR1)	No parameters set	-	--	--	--
A9 [Point A9 on emission point plan in Schedule 7]	Common vent header from Local Exhaust Ventilation (LEV) system and thermal treatment process (activity AR2) [Note 3]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	200 mg/m <sup>3</sup> [Note 1]	Maximum in reporting period	Annual	By calculation as agreed in writing with the Environment Agency
A10 [Point A10 on emission point plan in Schedule 7]						
A11 [Point A11 on emission point plan in Schedule 7]						
A12 [Point A12 on	Wet	Ammonia	10 mg/Nm <sup>3</sup>	Hourly	Every six	EN ISO

**Table S3.1 Point source emissions to air – emission limits and monitoring requirements**

Emission point ref. & location	Source	Parameter	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
emission point plan in Schedule 7]	chemical scrubber (activity AR4)				months	21877, CEN TS 17337 or otherwise as agreed in writing with the Environment Agency
A13 [Point A113 on emission point plan in Schedule 7]	Common vent header from Local Exhaust Ventilation (LEV) system and thermal treatment process (activity AR2) [Note 3]	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	200 mg/m <sup>3</sup> [Note 1]	Maximum in reporting period	Annual	By calculation as agreed in writing with the Environment Agency
A14 [Point A14 on emission point plan in Schedule 7]						
A15 [Point A15 on emission point plan in Schedule 7]						
A16 [Point A16 on emission point plan in Schedule 7]	Vent header from batch ovens (activity AR1)	Hydrogen Fluoride	5 mg/m <sup>3</sup>	Hourly	Every six months [Note 2]	CEN TS 17340 or CEN TS 17337
		Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	120 mg/m <sup>3</sup> [Note 1]	Maximum in reporting period	Annual	By calculation as agreed in writing with the Environment Agency
A17 [Point A17 on emission point plan in Schedule 7]	Vent from Metals Leaching Process (activity AR5)	No parameters set [Note 4]	-	-	-	-
A18 [Point A18 on emission point plan in Schedule 7]	Vent from Metals leaching process	No parameters set [Note 4]	-	-	-	-
A19 [Point A19 on emission point plan in Schedule 7]	Vent from solvent stripping process	No parameters set [Note 4]	-	-	-	-

Note 1: reference conditions are those applicable to non-combustion emission sources in Schedule 6, with no correction for oxygen content.

Note 2: representative sampling shall be arranged during the operations of the process responsible for the emissions of the relevant pollutant. An alternative sampling and testing frequency may be agreed in writing with the Environment Agency if deemed necessary as the relevant process has not been / will not be

<b>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
operated commercially within the reference period.						
Note 3: monitoring requirements for this emission source apply to one common sampling point representative of the common vent header emitting through the three collected emission points A1/A2/A3; A9/A10/A11; or A13/A14/A15.						
Note 4: Parameters and monitoring may be set in response to the submission of the Activity AR5 post-commissioning report under Improvement Condition IC4.						

<b>Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
W1 on emission point plan in schedule 7, emission to the Fujifilm private drainage system, connected to the CF Fertiliser effluent handling system, which discharges to River Tees ('RTO1' located at NGR NZ 4805 2188).	Uncontaminated surface water runoff, uncontaminated cooling water and reverse osmosis retentate	No parameter	No limit set	–	–	--
W2 emission from AR5 process/drum storage area to the Fujifilm private drainage system, connected to the CF Fertiliser effluent handling system, which discharges to River Tees ('RTO1' located at NGR NZ 4805 2188). Location to be finalised in the response to PO 1.	Uncontaminated surface water runoff and reverse osmosis retentate	No parameter	No limit set	–	–	--

<b>Table S3.3 Process monitoring requirements</b>				
<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
HEPA filters installed in down-flow booths for handling of powder materials and thermal processing equipment	Differential pressure across the HEPA filters	Continuous, when in operation	Not applicable	--

<b>Table S3.3 Process monitoring requirements</b>				
<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
potentially generating dust				
A1/A2/A3, A9/A10/A11, A13/A14/A15, A16	Theoretical emission profiling of Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	Prior to introducing/ changing formulation for metal salt raw materials listed in Table S2.1	Thermo-gravimetric analysis (TGA)	Applicable to the planning of new batch or continuous thermal processing campaigns associated with listed activities AR1, AR2.



## Schedule 4 - Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1.	A1- A3; A9- A11; A12; A13-A15; A16	Every 12 months	1 January

Parameter	Units
Produced metal oxides for use as catalysts (activity AR1)	Tonnes
Produced metal oxides for other uses (activity AR2)	Tonnes
Produced metal oxides for other uses (activity AR4)	Tonnes
Produced metal salt solutions (activity AR5)	Tonnes

Parameter	Frequency of assessment	Units
Water usage	Annually	tonnes
Energy usage	Annually	MWh
Total raw material used	Annually	Tonnes
Total metal raw materials listed within Table S2.1, used for activity AR1	Annually	kg as metal
Total metal raw materials listed within Table S2.1, used for activity AR2	Annually	kg as metal
Total metal raw materials listed within Table S2.1, used for activity AR4	Annually	kg as metal
Total metal raw materials listed within Table S2.1 used for activity AR5	Annually	kg as metal
Total process effluent sent offsite for disposal	Annually	m <sup>3</sup>

Media/parameter	Reporting format	Date of form
Air	Form Air 1 or other form as agreed in writing by the Environment Agency	20/12/21
Water usage	Form Water usage 1 or other form as agreed in writing by the Environment Agency	20/12/21
Energy usage	Form Energy 1 or other form as agreed in writing by the Environment Agency	20/12/21
Other performance	Form Performance 1 or other form as agreed in writing	20/12/21

<b>Table S4.4 Reporting forms</b>		
<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
indicators	by the Environment Agency	

## Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

### Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Measures taken, or intended to be taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>

<b>(c) Notification requirements for the breach of permit conditions not related to limits</b>	
<b>To be notified within 24 hours of detection</b>	
Condition breached	
Date, time and duration of breach	
Details of the permit breach i.e. what happened including impacts observed.	
Measures taken, or intended to be taken, to restore permit compliance.	

<b>(d) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

## **Part B – to be submitted as soon as practicable**

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment	

which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions as read in accordance with Schedule 1A to the Environmental Permitting (England and Wales) Regulations 2016.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

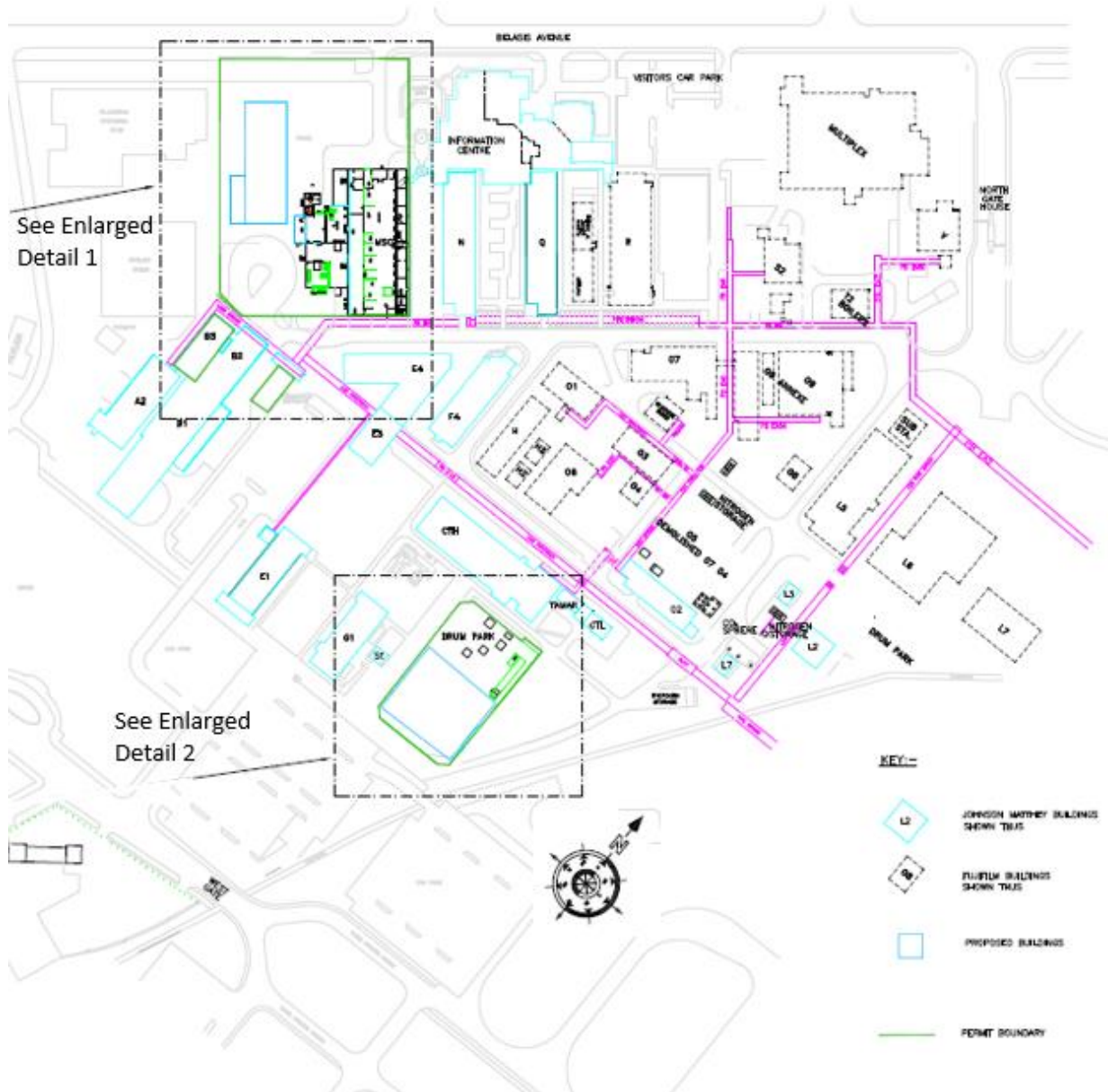
“year” means calendar year ending 31 December.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

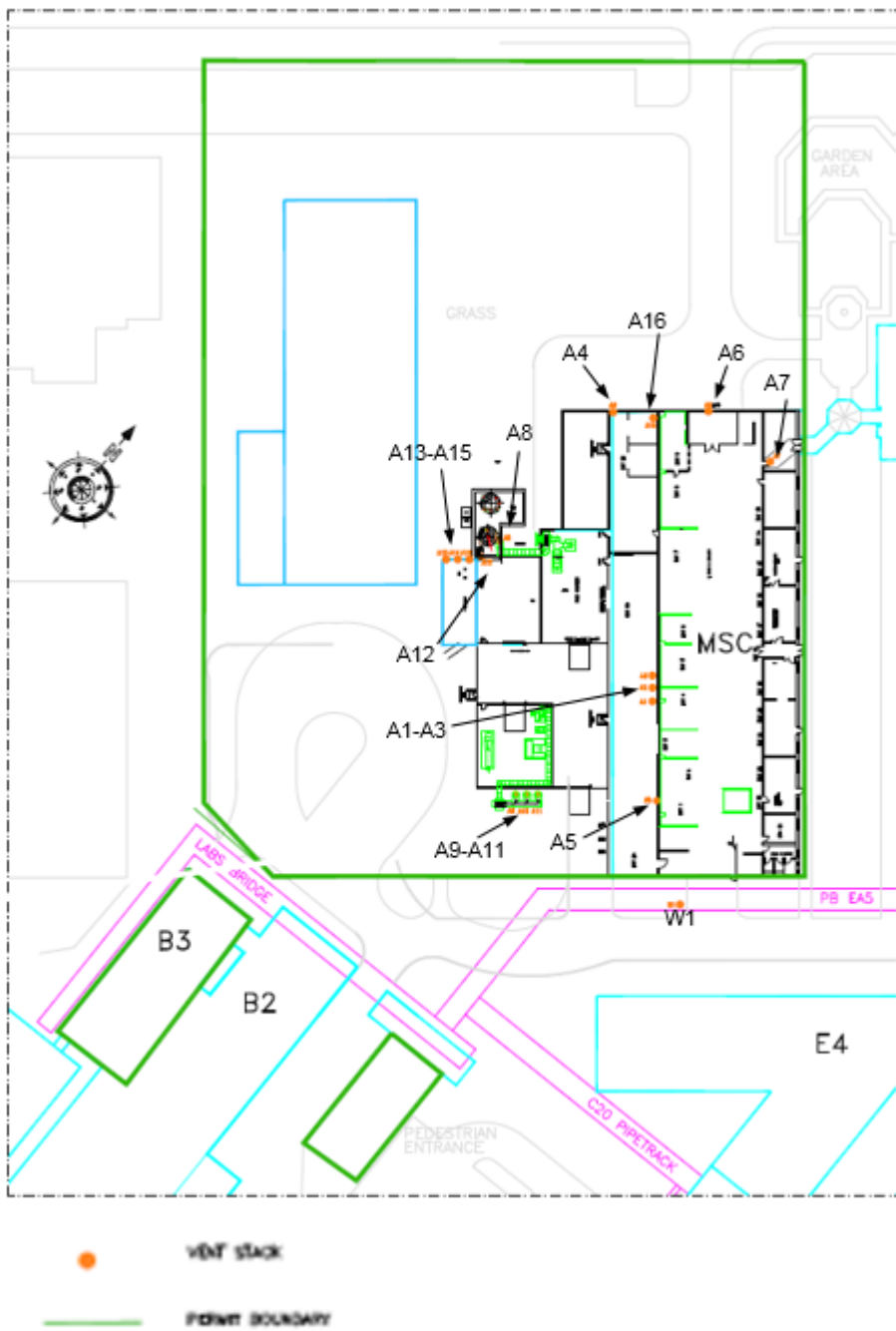
- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

# Schedule 7 – Site plan



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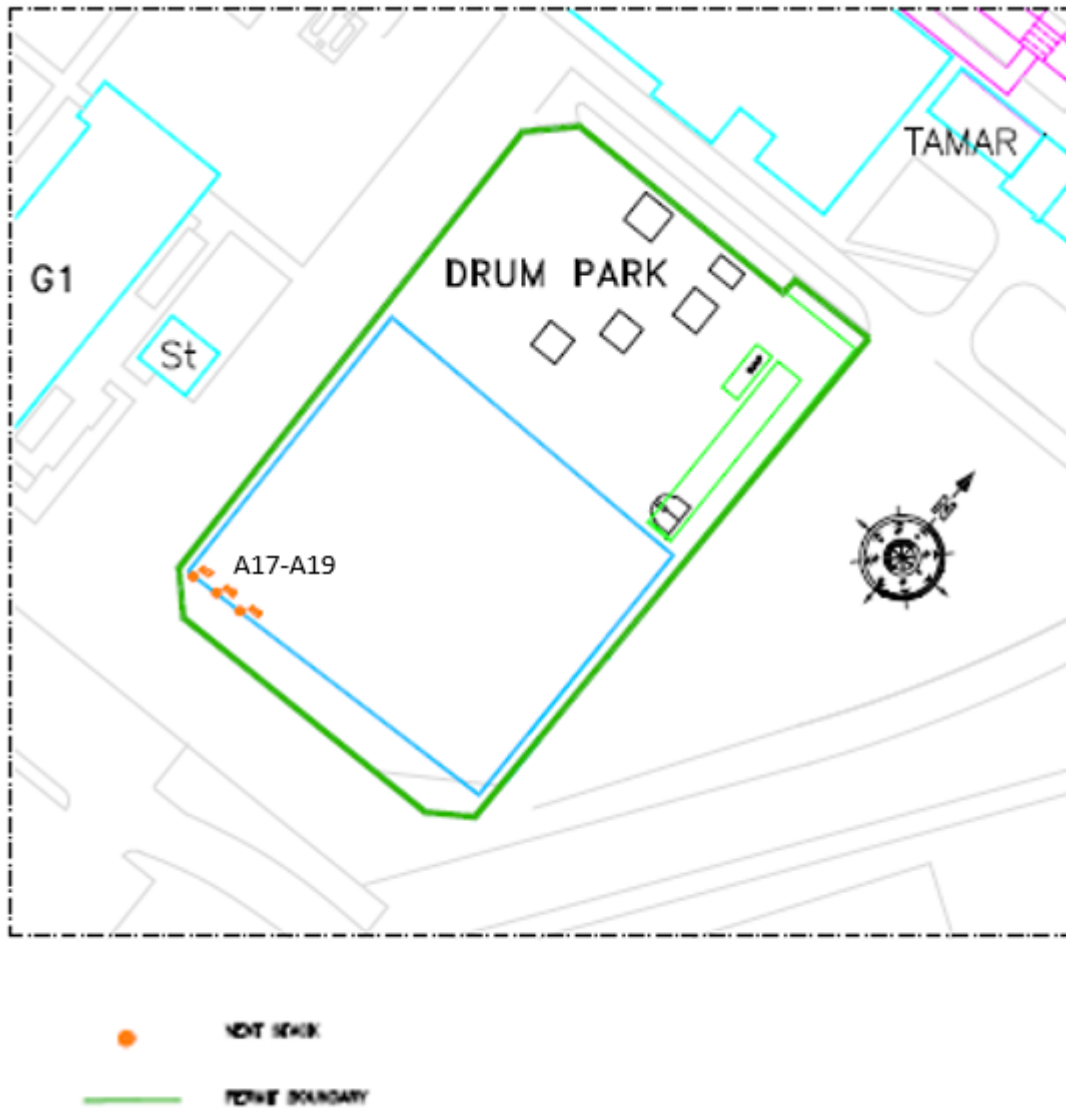
**Enlarged Detail 1 including emission points**



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**Enlarged Detail 2 including emission points**



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END OF PERMIT

**Permit Number: EPR/KP3536UC**

**Operator: Johnson Matthey PLC**

**Facility: Chilton Manufacturing Area Form Number: Air1 / 20/12/21**

**Reporting of emissions to air for the period from DD/MM/YYYY to DD/MM/YYYY**

<b>Emission Point</b>	<b>Substance / Parameter</b>	<b>Emission Limit Value</b>	<b>Reference Period</b>	<b>Result <sup>[1]</sup></b>	<b>Test Method <sup>[2]</sup></b>	<b>Sample Date and Times <sup>[3]</sup></b>	<b>Uncertainty <sup>[4]</sup></b>
A1/A2/A3	Hydrogen Fluoride	5 mg/m3	Hourly		CEN TS 17340 or CEN TS 17337		
A1/A2/A3	Oxides of nitrogen (NO and NO2 expressed as NO2)	120 mg/m3	Maximum in reporting period		By calculation as agreed in writing with the Environment Agency		
A9/A10/A11	Oxides of nitrogen (NO and NO2 expressed as NO2)	200 mg/m3	Maximum in reporting period		By calculation as agreed in writing with the Environment Agency		
A12	Ammonia	10 mg/m3	Hourly		EN ISO 21877, <a href="#">CEN TS 17337</a> or otherwise as agreed in writing with the Environment Agency		
A13/A14/A15	Oxides of nitrogen (NO and NO2 expressed as NO2)	200 mg/m3	Annual Average		By calculation as agreed in writing with the Environment Agency		
A16	Hydrogen Fluoride	5 mg/m3	Hourly		CEN TS 17340 or CEN TS 17337		
A16	Oxides of nitrogen (NO and NO2 expressed as	120 mg/m3	Maximum in reporting period		By calculation as agreed in writing with the Environment Agency		

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result <sup>[1]</sup>	Test Method <sup>[2]</sup>	Sample Date and Times <sup>[3]</sup>	Uncertainty <sup>[4]</sup>
	NO2)						

1. The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
2. Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example gas chromatography.
3. For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
4. The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Signed .....

Date.....

(Authorised to sign as representative of Operator)

**Permit Number: EPR/KP3536UC**

**Operator: Johnson Matthey PLC**

**Facility: Chilton Manufacturing Area Form Number: WaterUsage1 / 20/12/21**

**Reporting of Water Usage for the year *yyyy***

<b>Water Source</b>	<b>Usage (m<sup>3</sup>/year)</b>	<b>Specific Usage (m<sup>3</sup>/unit output)</b>
Mains water		
<b>TOTAL WATER USAGE</b>		

**Operator's comments:**

Signed .....

Date.....

(authorised to sign as representative of Operator)

**Permit Number: EPR/KP3536UC**

**Operator: Johnson Matthey PLC**

**Facility: Chilton Manufacturing Area Form Number: Energy1 / 20/12/21**

**Reporting of Energy Usage for the year *yyyy***

Energy Source	Energy Usage		Specific Usage (MWh/unit output)
	Quantity	Primary Energy (MWh)	
Electricity *	MWh		
<b>TOTAL</b>	-		

\* Conversion factor for delivered electricity to primary energy = 2.4

**Operator's comments:**

Signed .....

Date.....

(Authorised to sign as representative of Operator)

**Permit Number: EPR/KP3536UC**

**Operator: Johnson Matthey PLC**

**Facility: Chilton Manufacturing Area Form Number: Performance1 / 20/12/21**

**Reporting of other performance indicators for the period DD/MM/YYYY to DD/MM/YYYY**

<b>Parameter</b>	<b>Units</b>
Produced metal oxides for use as catalysts (activity AR1)	Tonnes
Produced metal oxides for other uses (activity AR2)	Tonnes
Produced metal oxides for other uses (activity AR4)	Tonnes
Produced metal salt solutions (activity AR5)	Tonnes
Total raw material used	Tonnes
Total metal raw materials listed within Table S2.1, used for activity AR1	kg as metal
Total metal raw materials listed within Table S2.1, used for activity AR2	kg as metal
Total metal raw materials listed within Table S2.1, used for activity AR4	kg as metal
Total metal raw materials listed within Table S2.1 used for activity AR5	kg as metal
Total process effluent sent offsite for disposal	m <sup>3</sup>

**Operator's comments:**

Signed .....

Date.....

(Authorised to sign as representative of Operator)